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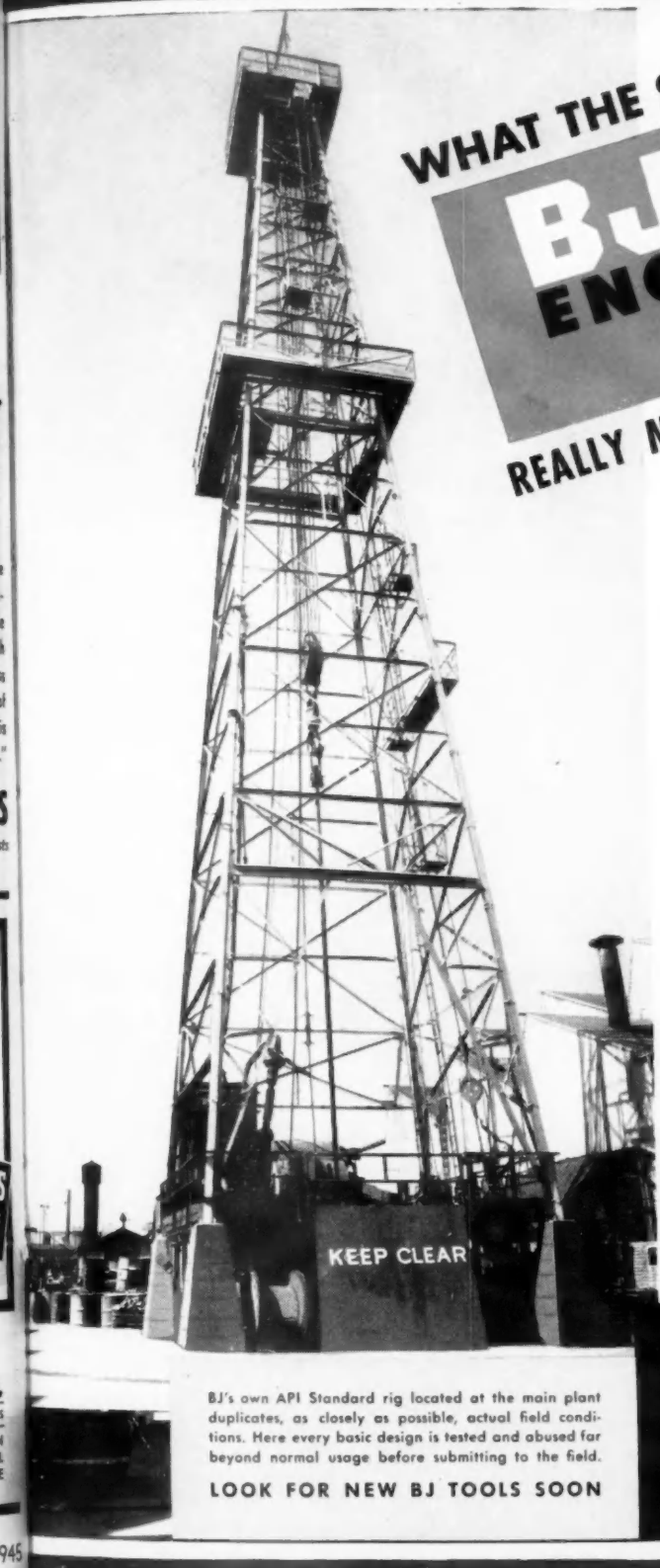
The OIL WEEKLY

FOR THE DRILLING, PRODUCING, PIPE LINE INDUSTRY



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June 18, 1945

VOLUME 118, NUMBER 3

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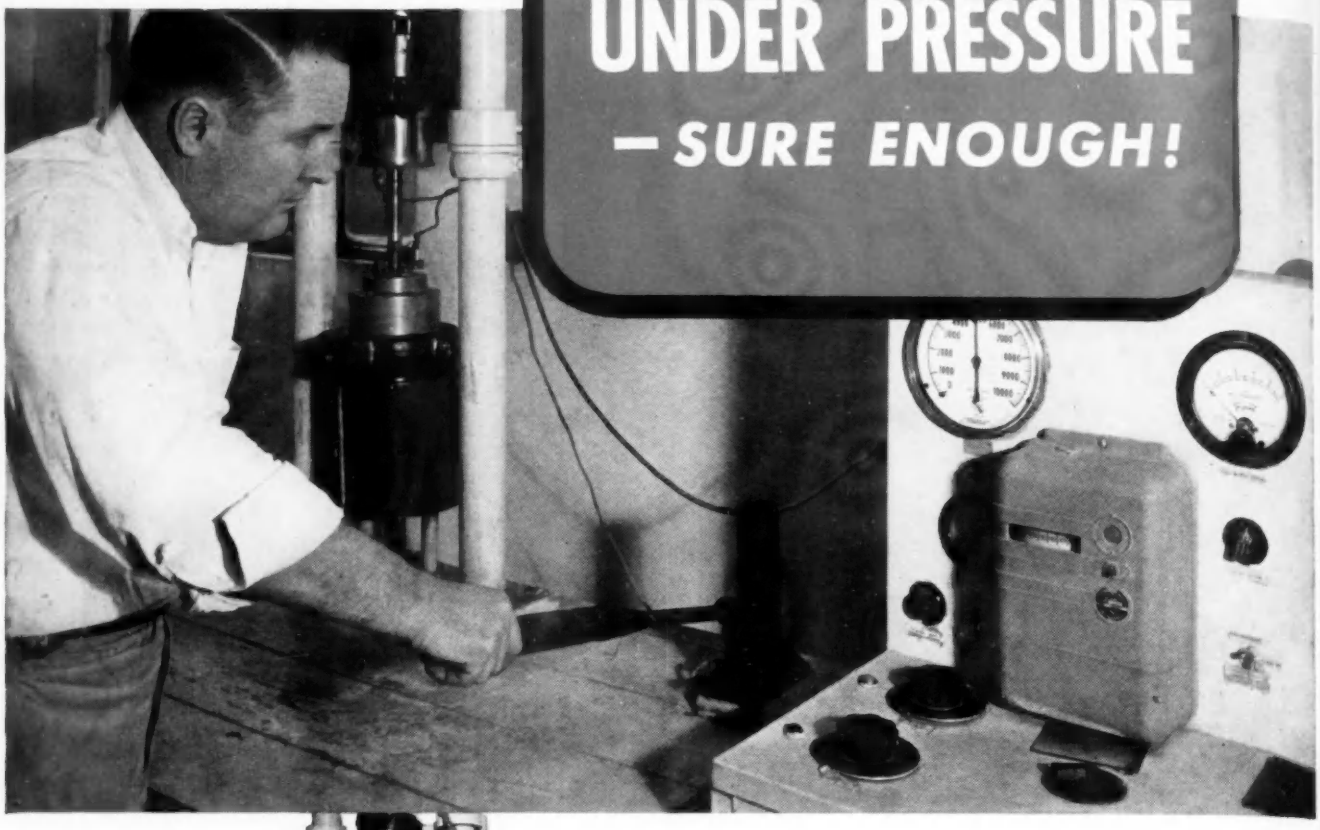

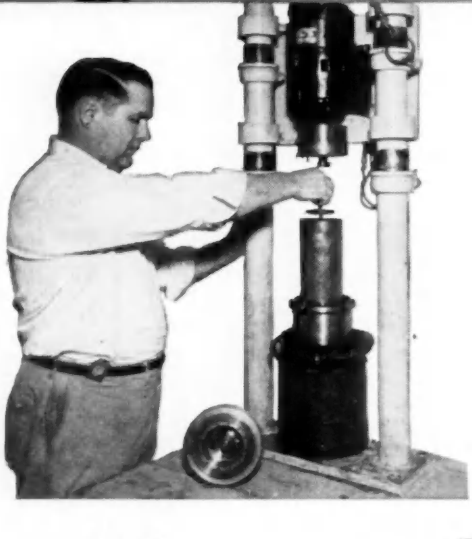

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LOOKING AHEAD
... with the Editor

BECAUSE of their economic, strategical and political importance oil fields of the Near East draw the attention of the world. Hardly a day passes that does not see mention of this area as a locality dominating the future oil situation. With a potential output known to be among the highest of the oil fields of the world, if not the highest, the group of producing districts in the region of the Persian Gulf quite likely holds the key to solution of many problems in the days ahead.

The seventeen-year-old Burgan field of Kuwait, in the southeastern part of the principality of Kuwait, at the head of the Persian Gulf, is in the heart of the Near East group of fields. Nine wells have been completed there, up to this time.

A project is now under way to recondition these wells and put them in first class mechanical condition. Approval has been obtained from the WPB in the United States, and British petroleum authorities, Kuwait Oil Company, Ltd., jointly owned by Gulf Oil Corporation and Anglo-Iranian Oil Company, have placed orders in the United States and England for all materials needed to complete the work. It is anticipated that all wells will be on production before the end of the first quarter of 1946.

In addition to reconditioning the wells and installing separators and other field equipment, the work involves laying of a ten-mile main pipe line, construction of terminal storage tanks, etc.

Don L. Carroll, staff writer, will give particulars of this development in an early issue.

THE OIL WEEKLY

ENGINEERING • NEWS • STATISTICS

Published by THE GULF PUBLISHING COMPANY, Houston, Texas

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Published Every Monday. Single Copies 15 cents (Except Special Issues). Subscription price: domestic and foreign, $2.00 a year; 2 years, $3.00; 3 years, $4.00. Advertising rates on application.

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The Outlook

First half 1945 oil business volume will exceed first half 1944 by about 7 percent, setting a new all-time record for the period. First five months crude runs to stills were up 7.3 percent, domestic production, 7 percent. Imports of crude and fuel oils also are larger than last year. Latter half 1945 will not bring sharply rising trends as did last half 1944; so 1945 as whole will not show as much gain as that noted during first six months.

* * * *

First half 1945 completions of gas and distillate wells will gain 17 percent over same period 1944 as against 15.5 percent gain for oil wells. One out of 7 of all productive wells completed first half will produce gas or distillate. Since 1918 only 1 out of 8 were gas producers.

* * * *

Helium will soon be generally used as a ferret for tracing underground movement of oil and gas. See page 39.

* * * *

One of the serious bottlenecks in the manufacture of synthetic rubber tires will be eliminated by the recently announced 43 percent increase in carbon black production.

* * * *

It will be winter before Senate oil investigation hearings are concluded and months before it develops specific legislation.

* * * *

First indication of how much additional steel will be available to the oil industry in the fourth quarter is expected before August 1 when first wholesale reductions in war munitions production program may come.

* * * *

No action before next winter is likely on Truman's plea for government reorganization and then he may not get all asked. The 1939 act specifically exempted FPC from transfer and it, among others, may retain preferred positions in any new legislation.

* * * *

Although the Senate oil committee will touch upon the matter this week, little hope is entertained of congressional action relieving FPC of its natural gas investigation authority. FPC has not set definite day for its first hearing.

* * * *

ODT's ban against conventions will be retained. The military movement, men and materiel, much of it from Europe, to the Pacific, will continue to overload railroads during forthcoming months.

* * * *

OPA may shift its position with respect to oil production costs, recognizing accounting procedures followed by small companies, but will fight any inclusion of percentage depletion. Congressional pressure insists that OPA look at its problems realistically.

* * * *

Henry Wallace's committee to suggest revisions in the patent system now includes Houston Kenyon, SONJ attorney in the Farbenindustrie action. Two other members are Charles F. Kettering and Dr. Vannevar Bush. Kettering "would accord full encouragement and development of inventions as primary means of fostering American industry."

* * * *

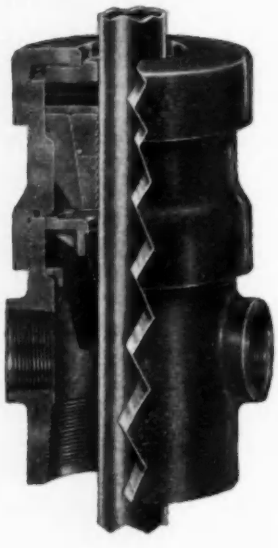
Shortage of drilling rigs noted during the past six months is beginning to ease, this attributable to slight increases in materials and, in some areas, manpower. The F.H.E. decision also has caused some cutback in last-half 1945 drilling plans. Cost of drilling also is being affected.

* * * *

Envisioned distantly, is coal petroleum piped from bituminous mines, where coal-derived gasoline already is being made, on experimental basis, for 12 cents per gallon. Also hoped for is a diesel oil from coal better than the present petroleum product.

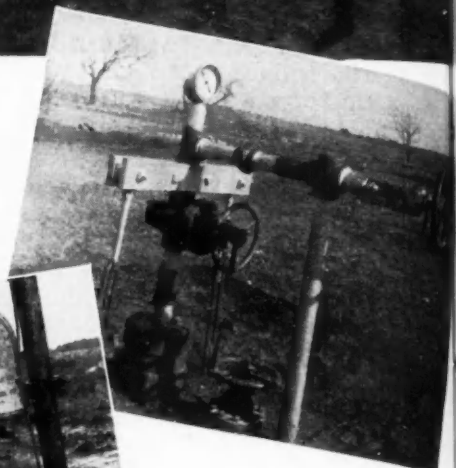
No. 1 TUBING HEAD For Pumping Well Economy—

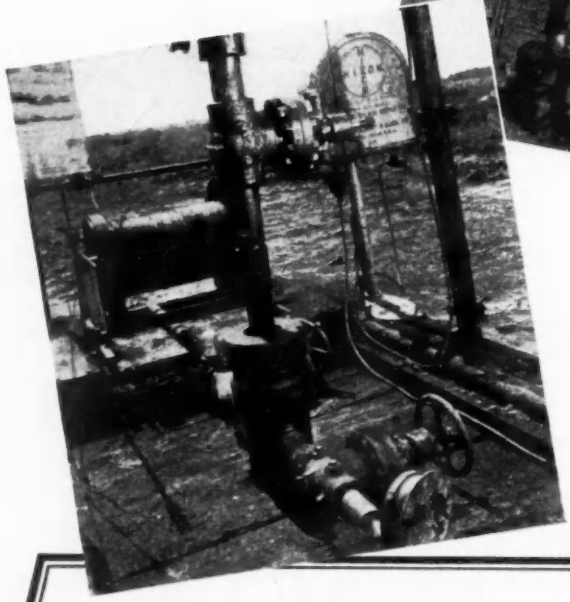
Larkin



The Larkin Type SR Forged Steel Tubing Head, although low in cost, fulfills all of the requirements of pumping wells. It has more than sufficient strength to suspend any length of tubing. The neoprene stripper provides protection against "kicking" wells when tubing is being pulled or run. The split neoprene packing rings can be replaced without disturbing the tubing suspension.

A great many operators install a Larkin Tubing Head on all medium pressure flowing wells (see right) and leave the head on for the entire life of the well.





When connecting to gas-lift (see left), the operator can salvage expensive Christmas-trees by installing a Larkin Tubing Head.

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The Changing Panorama

Compact Indicates Its Interest in Gas

THERE was more to the Interstate Oil Compact Commission meeting last week than indicated by the program. Devoting of all papers to the subject of natural gas marked a turning point.

In the past the Compact has been concerned chiefly with the production and conservation of crude oil. Undoubtedly, the Compact in the future also will devote its attention to natural gas conservation. This should develop into a broad field, for natural gas is due to become a more important business.

The interest of the Compact in the questions and problems of natural gas may go far toward determining whether the states or the federal government is to regulate the gas business, and therefore decide how far regulation of gas will extend.

In addition to papers presented on the floor of the meeting, a large number of other papers on specific phases affecting natural gas conservation were prepared by authoritative industry men. These will be published in a special edition of the Compact's Quarterly Bulletin. An attempt will be made to give them wide public distribution. These papers will constitute a general and detailed study of the natural gas industry, information badly needed. This may go far toward getting the natural gas story to the public before the Federal Power Commission begins its investigation.

P. S.—The British Got the Business

OIL companies are not the only ones complaining about the uncertainty of the American foreign policy, particularly that dealing with cartels. Other United States industries are being driven into economic isolation, if signs are being read aright.

A leading American firm was asked recently by a European company for an arrangement whereby United States technological processes would be used as bombed-out factories are rebuilt in war-devastated areas. In return the foreign company offered cash and exclusive American rights to any future improvements it might make in the processes.

The negative answer by the American firm was the only sound one that could have been given because "we don't want to risk trouble with our Department of Justice."

The foreign company then began negotiating with the British and most anyone who has been around knows that such an arrangement can be perfected there.

There is no fear on the part of the oil industry that, with proper effort, many billions of barrels more oil will be found.
—RALPH T. ZOOK,
President, I.P.A.A.

Best Insurance Policy of Freedom

"THIS war—any war—does not add to the stockpile of fundamental knowledge, but instead depletes that stockpile," Dr. Howard E. Fritz, director of research of The B. F. Goodrich Company, told the annual conference of the American Welding Society in Cleveland, Ohio, recently.

The spectacular advances made in the art of war, the speaker declared, are due "not to new research, but to the accumulation of knowledge over many generations." He indicated that while the impact of the war has accelerated many scientific developments to maturity, the new knowledge that made them possible was attributable to an increase of more than 600 percent in industrial reseach activity in the United States.

Fritz said the "best insurance policy of freedom is an overflowing reservoir of fundamental new knowledge." He warned that the military opponents have "shot the works" in their desperate struggle for victory, and that "if we are to sustain our standard of civilization we must give all possible impetus and encouragement to the creative thinkers." He declared that "there is no such thing as mass production of creative thinking," but that such thinking comes from inspiration, "which is and can only be the product of free men."

Factors Relating to Postwar Oil Industry

LATIN America, rather than the Middle East, will be our best source in supplementing domestic oil supplies when peace returns, in the opinion of E. P. Hindes and R. V. Whetsel, writing on "Tomorrow's Oil," in the April issue of *Service*, a publication of Cities Service Company.

"There will be intense interest, nevertheless, in the rich fields of the Middle Eastern area, where American nationals already have substantial holdings—backed, it is to be hoped, by an informed public opinion and the full prestige of the United States government . . ."

Other conclusions to be drawn after examination into the future of the industry, according to the authors, indicate that conservation will become, more than ever, the governing principle in producing our own reserves.

Also, petroleum substitutes will play an important, though limited part in supplying our future needs for liquid fuels, particularly if the price of crude oil and products rises to any marked extent.

There should be full cooperation in the postwar era between the petroleum industry and government, with the industry functioning independently as a free and competitive enterprise.

All these factors will have their influence on the industry in its job of providing sufficient petroleum to meet our domestic needs and to maintain a currently producible supply adequate for the defense of the nation.

Helium, a Ferret for Oil and Gas

A NEW and valuable application for helium is currently being investigated by the United States Navy in cooperation with the United States Bureau of Mines, it was revealed in Houston last week by Admiral Charles E. Rosendahl, a close student of helium's use in lighter-than-air craft. The new application for helium is as a ferret to trace the underground movement of reservoir fluids in gas and oil fields thereby providing information of great value, enabling gas and oil producers to operate their properties more efficiently and increase their recovery of these natural resources so essential to the war.

This ferret-like use of helium involves injecting it into the underground gas and oil reservoir at one or more carefully selected locations, through the well bores, and detecting its presence in the gas and oil produced from adjacent wells. The length of time required for the helium to travel from the injection well to each of the producing wells, and also the quantities of the injected helium found in each producing well, will enable petroleum engineers and geologists to determine reservoir conditions between wells and the pattern of drainage of the gas and oil through the porous reservoir rock.

Washington says the test now under way is being watched closely by the gas and oil industry in the expectation that it will provide a tool which has been sought for years. Because helium is chemically inert it is uniquely valuable for this purpose in that its identity, which can be readily determined by laboratory analysis, is not lost by combination with the reservoir rocks or fluids. Insofar as is known the use of helium for this purpose was first suggested by R. A. Cattell, chief of the Petroleum and Natural Gas Division, Bureau of Mines, Department of the Interior. It is now available in sufficient quantities and at costs which warrant its use in this manner as a ferret for the gas and oil industry.

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The Week's News

TIDELANDS ownership and domestic oil and natural gas resources will be in the limelight this week as two committees go into those subjects. The House Judiciary Committee will study measures to relinquish all claims of the federal government to the ownership of the California offshore deposits and the Senate special oil investigating committee will go into all phases of present and future domestic supplies. Page 44.

Oil Cost Factors Argued—OPA officials and spokesmen for the independent producers clashed again on the question of whether percentage depletion was an accepted method of accounting in the oil industry and the need for a ceiling price on crude which would reflect replacement cost, arguing before the House Small Business Committee at a hearing called to learn—which it never did—why completion of the OPA's production cost study has been so long delayed. Page 43.

Doughton Resolution Approved—Without hearing and without argument, the House Ways and Means Committee approved the Doughton resolution placing Congress on record as meaning that the option on intangible drilling costs should be a permanent part of the tax statutes, meeting the situation raised by the court decision in the case. Page 43.

Elk Hills Extension—Legislation extending until the end of 1946 the authority of the Navy to produce 65,000 barrels of crude daily from the Elk Hills reserve was introduced in House and Senate, for action before June 30.

Middle East and World Security—The Middle East oil reserves offer a potent reason why the United States should press for world economic and security pacts, Senator Burton of Ohio told the Senate, which will consider ratification of the San Francisco world security agreement before it recesses for the summer next month. See story below.

Finis for Enemy Oil Group—Its work finished, the Enemy Oil Committee has ceased operations, in the course of which it prepared extensive and detailed studies of oil fields, refineries and other installations held by Germany, Italy and Japan to the end that they might be more effectively attacked by the air forces. Page 42.

New Production High—Another new all-time high record for United States oil production was set last week when a daily average of 4,886,115 barrels were registered. Page 47.

Argentina Oil Trade—A Congressional investigation of a reported deal whereby the United States will ship 500,000 tons to Argentina in a trade to get a corresponding volume of linseed oil was asked by Representative Alfred J. Elliott of California who said this move would deprive America of half a million tons of critically needed oil. The deal was defended by Acting Secretary of State Grew, who declared "this exchange will make available to liberated areas in Europe and to the United States Argentine vegetable oils which heretofore have been burned to meet the republic's fuel needs."

No Residual Oil for Roads—With residual oil inventories at the lowest point since the war began, PAW last week prohibited its further use as a paving material anywhere in the United States. PAW explained that the new order was necessitated by large increases in residual oil-requirements of the Navy, War Shipping Administration and other essential users.

Oil Compact Considers Gas—The bulk of the discussions at the Interstate Oil Compact Commission's sessions in Oklahoma City last week were devoted to natural gas. Federal regulation was scored and it was pointed out that a greater market and consequent higher price would automatically result in conservation. Page 46.

Tanker Sinking Record—A total of 104 tankers, 7 percent of all American merchant marine vessels sunk during the war, up until V-E day, were oil carriers, it was revealed in Washington. Page 45.

Stoppages Affect Output—Three million barrels of needed oil products have been lost due to recent work stoppages in one field and five refineries, Deputy Administrator Davies announced. Page 42.

World Security Pact Seen Needed as Senators View Middle Eastern Area

The Middle East oil reserves were cited last week by Senator Burton of Ohio as a compelling reason for the establishment of the United Nations security organization now being developed at San Francisco.

"Oil," he said, "holds the key to economic wealth, improved standards of living, and even military power" and the Middle East resources, near the juncture of Europe, Asia and Africa, "may well be the key to their recovery and prosperity through the mechanization and development of their impoverished people."

Available Without U. S. Loan

And, he added, "Senator Tunnell and I on our tour also observed with especial satisfaction that this great resource was thus available to these people without the necessity for borrowing any part of it from the United States Treasury."

"If for no other reason than the economic recovery of the world through the use of its own natural resources as exemplified through the petroleum supply of the Persian Gulf," he said, "it is in the interest of the United States and of the world to establish some kind of international stability which shall foster the early development of those resources and the distribution of their values to those who will use them partly for themselves and partly as purchasing power in dealing with the rest of the world."

Burton asserted that unless these resources are put to greater use than at present, United States resources, if called upon to supply the needs of the world, would be exhausted comparatively soon, while the corresponding resources of Asia, Europe and Africa would be conserved for future generations.

Accordingly, he contended, it is important to conserve our own resources by developing the Persian Gulf, raising "an important argument in favor of some form of international coordination of effort that will encourage the development of the natural resources of Europe, Asia and Africa, as well as the Americas, in the present generation."

Of Military Value

Burton emphasized heavily the potential military value of the Middle East resources in the event of another war, which would make them a major prize.

"If there is to be even a substantial prospect of a World War III," he told the Senate, "this tremendous petroleum resource is of such military value in the event of such a conflict that it would almost inevitably be a primary objective in such a war.

"Therefore, unless there be international stability and a reasonable assurance of international stability, this very petroleum resource itself may provide an occasion for hostile action in an attempt to secure some advantage through obtaining access to it. From a military standpoint this is an easy object lesson of the need for a general international organization of stability and strength."

Committee Liquidated—Work Well Done

The Enemy Oil Committee which prepared the studies of enemy-held oil fields and installations which were the basis of allied air raids in Europe and are being so used in the Pacific, shut up shop June 1 and is now being liquidated.

With the defeat of Germany, there was no further need for the committee's European division, and the Far Eastern division already has completed its work of developing data on prewar properties. Current information regarding Japanese-held facilities is being gathered by the Army and Navy.

The Enemy Oil Committee was one of several groups set up to evaluate enemy military assets which formed the "life lines" necessary to stage both offensive and defensive strategies. Much of the allied air effort in Europe was directed to the knocking out of these facilities, so successfully in the case of oil that whole German armies were stalled at times for lack of fuel.

Similarly, Japanese oil installations, both in the home islands and throughout all of the territory comquered in 1942, have been under air attack.

Davies Tells of Loss by Oil Refinery Stoppages

Approximately 3 million barrels of badly needed products have been lost as a result of recent work stoppages, it was reported June 15 by Deputy Administrator Davies. One field and five refineries, he said, have been the subject of stoppages.

Davies pointed out that shutdowns in the oil industry are more serious than in most any other industry because the production loss does not end as soon as work is resumed but may be as long as 30 days in getting back to maximum level.

The five refineries shut down have an average capacity in excess of 100,000 barrels a day of petroleum war products, 60,000 barrels of civilian grade gasoline 50,000 barrels of home-heating oil and around 15,000 barrels of kerosine, as well as a variety of other products, such as butadiene.

Rules on Tank Cars Eased As Situation Is Improved

The Interstate Commerce Commission on June 15 suspended its order imposing progressively higher demurrage charges for delays in the unloading of railroad tank cars, but extended the life of the order to November 1, so that it might be re-applied if necessary.

The tank car situation has definitely eased, but there is a possibility that conditions may again become tight when the movement of oil and other liquid products to the West Coast reaches a peak. A few additional tankers, placed in the coastwise service, helped the situation.

T-G-T Gets Limited Permit To Increase Appalachian Gas

A limited certificate, permitting Tennessee Gas and Transmission Company to operate under lease from Defense Plant Corporation four new compressor stations and to provide additional equipment at five existing stations, to enable it to increase natural gas deliveries into the Appalachian area by 60 million cubic feet per day, was issued by the Federal Power Commission June 15. A provision of the commission's order, however, insures the authorization only for the duration of the war emergency period.

The commission dismissed the company's application for authority to construct a 95-mile 16-inch pipe line from the San Salvador gas field, Texas, to its main line in Nueces County on the ground that there was not a sufficient showing that the line is required.

The opinion discussing Tennessee's plans to obtain gas from The Chicago Corporation in the Carthage field to relieve the strain on the Stratton-Agua Dulce field through a pipe line to be built by United Gas Pipe Line Company, indicated that the commission does not believe a 24-inch line necessary but that a 16-inch line would be sufficient to carry the 105 million cubic feet daily which it is proposed to move from Carthage to the Monroe field.

Oil Shale Mining Made Synthetic Fuels Division

division in the Office of Synthetic

Establishment of an oil-shale mining Liquid Fuels was announced by Bureau of Mines Director R. R. Sayers, with E. D. Gardner, former regional engineer in charge of the bureau's central experiment station at Rolla, Missouri, chief of the division.

The new unit will be charged with the responsibility for all mining activities of the synthetic liquid fuels program, and will make engineering and economic studies to develop efficient, low-cost methods of mining the oil shale and possibly the coal to be used in producing synthetic oil and gasoline.

The bureau now is developing a 200-ton-a-day shale mine, which can be enlarged if necessary, at the oil shale demonstration plant site at Rifle, Colorado.

PIWC Member Dies

Phil T. Williams, member of Petroleum Industry War Council, died at his home in Indianapolis, June 13. He was chairman of the National Council of Independent Petroleum Associations and president of the Indiana Independent Petroleum Association. Appreciation for Williams' work on PIWC was expressed by William R. Boyd, Jr., chairman.

Humble Suit to Restrain Seizure Is Considered

The suit of Humble Oil & Refining Company to enjoin the Petroleum Administration for War from carrying out President Truman's order to seize the company's refinery at Ingleside, Texas, has been taken under advisement by Federal Judge T. M. Kennerly.

Judge Kennerly's action followed a one-day hearing in Houston on June 11 and he said his decision would be announced at 10 a.m. June 20.

The temporary restraining order issued at Humble's request on June 6 will remain in effect in the meantime, Judge Kennerly said.

Gasoline Upped by PAW

Civilian motorists will have 154,000 barrels of gasoline a day more in the third quarter of this year than they had in that period of 1944, under allocations announced by PAW.

The civilian gasoline allocation for the quarter will be 1,404,000 barrels daily, including 140,000 barrels to provide for the increases in A and B rations put into effect this month and an increase of 14,000 barrels in the regular allocation.

Military gasoline requirements were not made known, but Deputy Administrator Davies declared they are at a level which will require continued capacity operation of all United Nations refining facilities.

WSA Quits Insurance

The War Shipping Administration will withdraw from the cargo-war-risk insurance field on July 1, terminating all WSA open cargo policies, it was announced June 14.

Initiated in 1942, the insurance program covered a substantial part of the import cargoes of the United States during the peak period of submarine sinkings in 1942 and 1943, but for the past two years, as the situation improved, WSA gradually contracted its operations and private insurance companies correspondingly increased their activity.

The agency reported that it has insured more than $3290 million worth of cargoes during the war period and despite heavy losses now has a favorable balance in excess of $15 million.

U.S.G.S. Wyoming Map

The United States Geological Survey last week called attention to the oil possibilities west of the Wind River Mountains in western Wyoming, publishing a map of the northwest end of the mountains showing structural features which reveal regional trends that may be projected into adjoining areas of the Green River Basin.

Issued as Preliminary Map 31 of the oil and gas investigations series, copies of the map may be had at 60 cents each from the Geological Survey offices in Washington, Tulsa, Denver or Casper, Wyoming.

OPA Price Decision Further Delayed For Oil Company Accounting Survey

A suggestion that the Office of Price Administration recognize the accounting practices followed by the great majority of small oil producers may go far toward settling the controversy between the price agency and the industry over costs to be considered in determining maximum crude prices.

The suggestion was made by Representative Leonard W. Hall of New York, a member of the House Small Business Committee, during hearings June 12-13 to determine the reasons for delay in OPA's completion of its crude price study, after Paul M. Green, deputy administrator for accounting, admitted that he had never investigated the accounting methods used by thousands of independent operators throughout the country.

Green testified that OPA had adopted the accounting method followed by about 100 of the larger oil corporations and conceded it might be that operators unable to employ expert accountants and engineers used other methods of accounting. He agreed to confer with James V. Brown, secretary of the National Crude Oil Advisory Committee which assisted OPA in developing the current cost survey, to develop some means for investigating more general accounting practices.

Russell Brown, general counsel of the Independent Petroleum Association of America and counsel for the OPA industry committee, Merle Becker, vice president of W. C. McBride, Inc., St. Louis producers, and James V. Brown, had attacked the methods and policies of the OPA.

Becker charged flatly that the OPA and Office of Economic Stabilization "are impeding the securing of the maximum needed supply of petroleum for war, industrial and essential civilian requirements." This is being accomplished, he said, by maintaining crude price ceilings below a generally fair and equitable level; discriminating against the producers, particularly the independents; fostering and encouraging monopoly by maintaining a situation in oil prices favorable to few large companies and detrimental to thousands of independent producers; contending that the crude industry must use 1936-39 as a representative peacetime level as a standard below which current earnings must fall before upward price revision could be allowed, and permitting the prices of products to rise in 1941 while preventing a corresponding rise in crude prices.

Independents Being Liquidated

"The effect of the administration of the price control low is the liquidation of the independent petroleum producer," Becker asserted.

"The responsibility for the future supply of petroleum in the United States must now be assumed by the Congress. The OPA has assumed a position directly contrary to further advancement. The efforts of PAW seem lost in administrative frustration."

Becker suggested the committee insist on any one of these three programs:

Uniform price increases on crude petroleum in line with the system used by the industry in periods of free economy;

Uniform price increases for crude petroleum to be paid by purchasers, through subsidy if no other way of support can be found; or

Complete withdrawal of price ceilings on crude, retaining product ceilings where proper.

Russell Brown's Testimony

The OPA has followed instructions of Congress to set up an industry advisory committee, Russell Brown charged, but has ignored the committee's recommendations with regard to methods of cost findings. The agency also has consistently refused to consider current replacement costs.

Both Becker and Brown quoted at length from the reports of major company presidents explaining to their stockholders that replacement costs are out of line with permitted prices.

"Replacement costs are essential to any continuing business," Brown asserted. "If a business continues to sell its products below the cost of replacement, to that extent the business is being liquidated.

"If we are denied replacement costs, we are denied the use of the long-established 'first in and first out' method of accounting used in other industries. This position of refusal to use the accounting system on which the industry has been built is confusing and attempts to deny to the industry the normal method of establishing a base for fair price."

Refusal of the OPA to adopt a simplified procedure for its crude cost survey and to agree with the committee on a figure to represent finding costs has resulted in many of the 700 questionnaires sent out being returned without any data because the operators either could not make the involved computations or were without adequate help for the purpose, it was disclosed by James V. Brown.

Brown also told the committee that OPA did not accept the industry's suggestions of operators to whom the questionnaires should be sent but took a number of names from a list "several years old" with the result that "quite a number" of names were those of producers out of business or not to be located. The deadline for return of the questionnaires was postponed from May 1 to June 1 and now has been extended to June 30, he said.

85 Percent Minimum

Meanwhile, O. D. Judd, associate director of the OPA fuel division, has expressed the opinion that unless 85 percent of the questionnaires are returned completed, he will not consider the facts conclusive, although questionnaires already returned represent more than 60 percent of the country's total production.

Green gave the committee a lengthy explanation of why OPA follows sustained depletion rather than percentage depletion, declaring of the latter that "we insist it does not apply to the pricing of oil and it has nothing to do with replacement costs."

He warned that if the committee amended the law to provide a special provision to help small oil operators it would be necessary to make it apply to all industries.

This contention was supported by David L. Cavers, assistant general counsel for OPA, who disclosed that the refinery industry advisory committee already has taken the position that if replacement cost is considered for crude it should be accorded to refining, as well, pointing out that the average cost of typical refinery items is 50 percent more than just before the war.

Green also reported that the Internal Revenue Bureau had informed him that 95 percent of the operators, large and small, show cost depletion in their income reports, and added that all but six of 185 small operators who have sent in their cost questionnaires reported sustained depletion.

If the committee is not yet convinced of the correctness of OPA's position, he concluded, OPA agents in the Internal Revenue Bureau could examine oil-

Fall Set for Enactment Of Doughton Resolution

Without hearings and after only brief discussion, the House Ways and Means Committee on June 12 ordered a favorable report on the Doughton resolution to safeguard the option on intangible drilling costs.

Introduced to deal with the situation created by a circuit court decision in the F. H. E. Oil Company case, the resolution provides that "in the public interest the Congress hereby declares that by the reenactment, in the various revenue acts beginning with the Revenue Act of 1918, of the provisions of section 23 of the Internal Revenue Code and of the correspondent sections of prior revenue acts allowing a deduction for ordinary and necessary business expenses, and by the enactment of the provisions of section 711(b)(1) of the Internal Revenue Code relating to the deduction for intangible drilling and development costs in the case of oil and gas wells, the Congress has recognized and approved the provisions of section 29.23(m)-16 of Treasury Regulations 111 and the corresponding provisions of prior Treasury Regulations granting the option to deduce as expenses such intangible drilling and development costs."

There is a possibility that the House will pass the resolution, to which there is no opposition, before it recesses for the summer, although it is doubtful if the Senate will act on it before next fall.

operator returns to determine whether they show sustained depletion or, as an alternative, field accountants could go over the books of operators for the same purpose.

Although Sumner T. Pike, director of the fuel price division, was present at the final hearing, he did not participate and the argument for the OPA's pricing policies was handled by Judd, who specifically answered charges leveled against the agency.

Judd pointed out that while the industry wants replacement cost used in determining the present cost of production, neither it nor any other industry ever kept its books on a replacement-cost basis, and declared that the contention that unless replacement cost is recognized the incentive to search for oil is eliminated is best met by the figures on exploration operations for recent years.

He denied that the 1936-39 base period was one of depression for the industry, as charged, pointing out that the Internal Revenue Bureau selected the same years as a basis for excess profits taxes for those in the oil industry and said that, according to the bureau, no protest to the use of that period has been filed. Further, he asserted, internal revenue data indicate that the "earnings of no other four-year period would be as favorable since 1926 and prior to price control."

Judd explained that OPA considered percentage depletion inapplicable in a cost study because it is based upon the gross income of oil production, whereas sustained depletions reflects cost position.

However, he said, "in order that the presently conducted crude survey will not be impeded by the failure of small producers to report because of their possible inability to provide sustained depletion figures, we have agreed to survey a representative group of small producers to determine whether or not they do have sustained depletion figures."

Such a survey, to cover approximately 200 operators, could be made within a week and, he indicated, if the industry's contention that it cannot furnish sustained depletion figures is corroborated by the results, OPA will accept percentage depletion figures, even though they would "inflate" the result to some extent.

Russell Brown, however, declared that OPA already has in its files all the information necessary to determine that point.

In defense of OPA accounting practices, Green submitted letters of commendation from what he termed outstanding accountants and accountants' associations, none of them from oil-industry accountants. To counter these letters, Brown said, he would file with the committee the views of some of the accountants of the oil industry.

Summing up the hearing, Brown declared it had accomplished nothing except to further confuse the issue, and pointed out it had not succeeded in getting the information for which it was held—why the OPA study has been so long delayed.

Plea to Relax Government Controls Looked For at Senate Group Hearing

The Senate oil committee will resume its investigation of the world petroleum situation this week (Tuesday), with hearings on the subject of domestic oil resources at which leading members of the industry and representatives of interested federal agencies will testify.

Industry representatives will stress the gains that have been made toward conservation of American oil resources and the essentiality of cooperation by the government to encourage exploration and production by relaxation of all government controls. The lightening of taxation and the provision of either an adequate crude price under OPA or restoration of a free market.

Natural gas, as well as oil, will be discussed during the hearings, which also will go into the question affecting development on the public lands, including the necessity of a more liberal and stabilized policy, revision of the leasing act, and concentration of administrative powers in one agency.

This phase of the inquiry also will go into the question of tidelands, including the extension of public lands policy to include the subsoil under territorial waters within the federal jurisdiction and the desirability of a federal policy with respect to the rights of the United States in and to mineral deposits contained in the subsoil of the continental shelf.

Letter to Editor

On Exploratory Statistics

To The Editor:

Dr. Lahee's perennial tables on wildcatting are always welcome. Important echoes from them for 1944 (and former years) appeared in The Oil Weekly of May 21 in a very interesting and just letter from Dr. Jenny and in V. G. Gabriel's article "Mathematical Chances of Finding Oil." Since I have in my own technical library several hundred books and bulletins on mathematics in addition to a good complement on geology, engineering, physics, etc., naturally I read the latter paper with especial interest.

Dr. Jenny, incidentally, touched off something when he wrote: "It also would be interesting to know how many times a particular area had to be surveyed by reflection before structure was recognized."

Exactly. Something not taken into account in Dr. Lahee's figures or in the Gabriel mathematics is the well-known fact that there are geologists and geologists, and there are geophysicists and geophysicists. Indeed, some creekologists, if not witchstickers, seem to be more successful than others.

Unfortunately, from the standpoint of oil discovery the best criterion of what is the best standard of good geology and geophysics is actual discovery of oil. However, it would be unethical to publish specific statistics accordingly, aside from the free advertising involved.

Professionally one hesitates to stress greater or lesser ability in one's profession. But the bare statistics here and superficial application of mathematics to them show only what the average wildcatter is indiscriminately up against. That there are possibilities of much better chances for success with any and/or all scientific methods carefully and aptly applied, should be better known and more widely appreciated and heralded.

Paul B. Williamson
Consulting Engineer and Geologist
New Orleans, Louisiana

Oil Fire Extinguishing Studies to Be Available

Detailed reports on oil fire extinguishing tests, recently conducted by Standard Oil Company (Ohio) at the Moorehead tank farm near Findlay, Ohio, will be made available to the industry. A complete record, including pictures by a seven-man camera crew, was carefully kept as a 93-foot tank of crude oil was successively fired and extinguished by several different methods.

The tests marked the first time a water spray system had been used on an oil fire with such a large surface area. It also furnished the first large-scale test for mechanically mixed foam with fixed installations.

Engineers who have studied the test data have reached these conclusions:

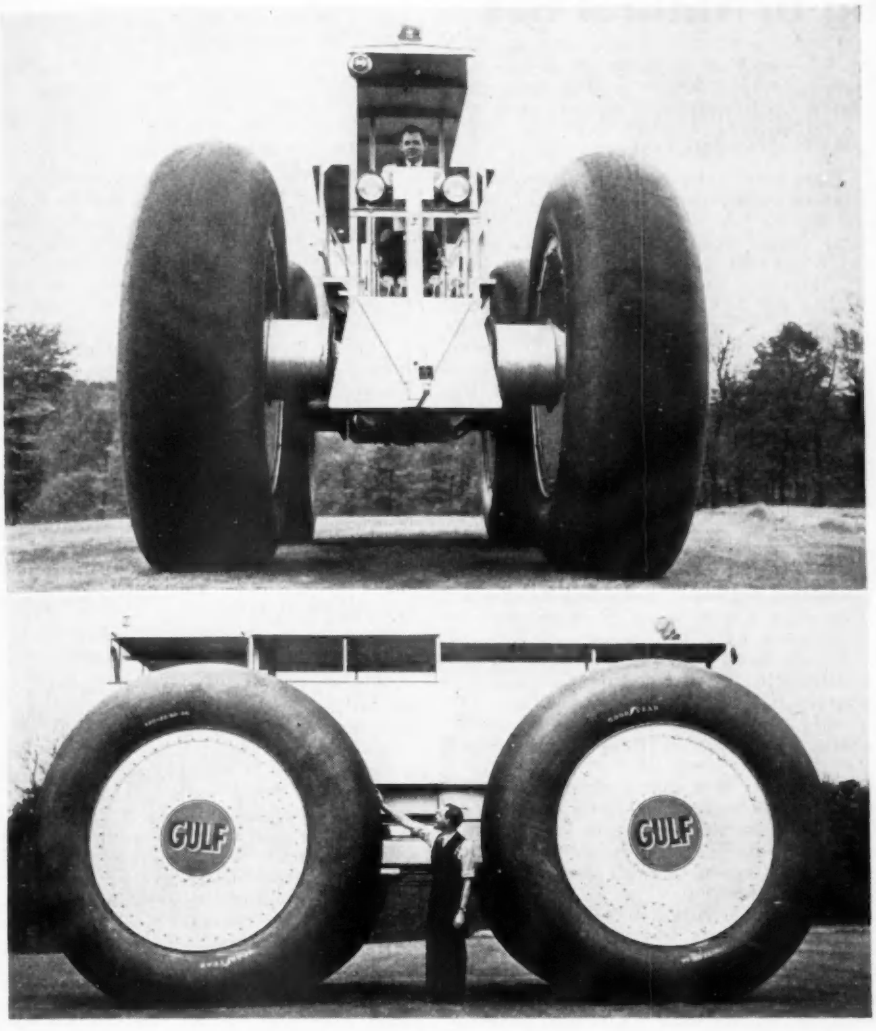
A big oil fire can be made its own worst enemy by tripping little gadgets or valves that literally make the fires tattle on themselves and set into action mechanical fire-controlling and fire-fighting systems.

Automatic induction of mechanical foam, or air foam should now be practical for big-risk fire protection.

Fires involving inflammable liquids, such as oil, gas, petroleum products, can be licked and the property protected from serious damage by the proper use of fixed fire-fighting installations that will function without the touch of a human hand.

R. T. Henderson, safety engineer of Standard Oil Company (Ohio) says the tests may prove the prelude to extensive installation of mechanical foam induction systems on big-risk properties. "It can cut costs of protection and simplify it, for only one feeder line is required and it can all be handled without manual assistance," he said. "The heat will start everything through the rate-of-rise system, kick in the water valve and start proportioning the solution."

NEW MARSH BUGGY CONSTRUCTED



A new marsh buggy of The Gulf Research and Development Company, to be used in exploration in Nicaragua. Due to flotation provided by the drums and tires, the buggy navigates streams and lakes of any depth. The tires are 10 feet in diameter, weigh 315 pounds each and contain an inner tube weighing 125 pounds. The tires are made with non-skid tread design. However, triangular-shaped segments of rubber are strung on steel cables and mounted transversely across the surface of the tire to provide the necessary traction in mud, and acting as paddles in deep water. Tires can be inflated while the buggy is in operation. The buggy is 24 feet in length and between 12 and 13 feet high. Each buggy weighs about 7500 pounds, and the carrying capacity is from 1000 to 1500 pounds.

Top photo shows front and bottom photo shows side view.

Oil Carriers Sunk During War Reach Total of 104

Seven percent of all the United States flag merchant ships sunk during the war have been tankers, it was disclosed last week by the War Shipping Administration in a report showing the loss of 1554 vessels between November 9, 1940, the date of the first sinking, and May 8, 1945, the day Germany capitulated, including 104 oil carriers. A tanker, the "Astral," was the fifth American ship to be lost after the outbreak of the war, sinking at an undetermined point sometime in November, 1940, and another, "Swiftscout," was the next to the last to be lost, sinking in the northwest Atlantic on April 18, 1945. Three tankers were sunk in 1941 but the following year they went down at the rate of three every two weeks, a total of 76 being lost. Only 17 were lost in 1943, as a result of improved protective and convoy systems, and in 1944 the losses were further cut to seven. In addition to the "Astral," the 1941 losses were the "Midio" and "Montelbello," both in the Pacific in the first 16 days after the Pearl Harbor attack.

The 1942 losses were the heaviest of the war for merchant shipping. Only three tankers, the "Allan Jackson," "Francis E. Powell" and "Rochester," were lost in January but in February the toll increased to ten—"W. L. Steed," "India Arrow," "China Arrow," "Pan Massachusetts," "J. N. Pew," "Republic," "Cities Service Empire," "W. D. Anderson," "R. P. Resor," and "Oregon" all but two going down in the northwest Atlantic.

March losses, "Gulftrade," "John D. Gill," "Ario," "Australia," "Muskogee," "E. M. Clark," "Papoose," "W. E. Hutton," "Neaco," "Dixie Arrow," "T. C. McCobb," and "Tiger," all but one in the northwest Atlantic.

The April total was only 11 with the first sinkings in the south Atlantic—"The Eugene V. R. Thayer" and "Connectitut," reported other losses being "Bryon D. Benson," "Comol," "Rico Cathoula," "Atlas," "Gulf America," "Tamaulipas," "Esso Boston," "Mobiloil," and "Federal."

May saw an increase of sinkings to 13, with the first losses in the Gulf of Mexico—"Joseph M. Cudahy" and "Munger T. Ball," both on the same day—and "Halsey," "Esso Houston," "Virginia," "David McKelvy," "Gulfpenn," "Gulfoil," "Mercury Sun," "Halo," "Samuel Q. Brown," "Carrabulle," and "New Jersey."

Only nine vessels were lost in June, "L. J. Drake," "M. F. Elliott," "Franklin K. Lane," "Hagan," "F. W. Abrams," "Cities Service Toledo," "E. J. Sadler," "Rawleigh Warner," and "William Rockefeller."

July losses dropped to four: "J. A. Moffett, Jr.," "Benjamin Brewster," "R. W. Gallagher," and "William F. Humphrey." August sinkings were only three: "R. M. Arker, Jr.," "Louisiana," and "Jack Carnes, and only two oilers were lost in September, "Patrick J. Hurley" and "Esso Williamsburg." In October, the toll went up to six and brought first reports of sinkings in the Pacific, "Larry Doheny" and "Camden," together with "Robert H. Colley," "Swiftsure," "Gurney E. Newlin," and "New York."

Only three tankers—"Hahira," "Meton" and "Caddo"—were lost in November, and none in December.

The 1943 losses were as follows: January—"Broad Arrow" and "Brilliant"; February, "Atlantic Sun," "Robert E. Hopkins" and " Esso Baton Rouge"; March, "Virginia Sinclair"; April, "Gulfstate" and "Sunoil"; May, "H. M. Storey" and "John Worthington"; June, "Esso Gettysburg"; July, "Bloody Marsh" and "William Boyce Thompson"; November, "Melville E. Stone"; December, "Thuchet" and "McDowell."

Reported in 1944 were "E. G. Seubert" in February; "H. D. Collier" and "Seakay" in March; "Penn Pennsylvania" in April; "Esso Harrisburg" in July; "Jacksonville" in August, and "Fort Lee" in November. This year's sinkings were "Oklahoma" in March and "Swiftscout" in April.

Oil Compact Devotes Entire Meeting To Problems Relating to Natural Gas

Conservation of natural gas was the subject for discussion at the quarterly meeting of the Interstate Oil Compact Commission held in Oklahoma City last week. The entire session was given over to a series of papers relating to this subject and to the prospective activities of the Federal Power Commission.

Andrew F. Schoeppel, governor of Kansas and chairman of the Commission, pointed out that gas was within the scope of the board, a conclusion which was supported subsequently by a resolution presented for consideration by the legal committee. Heretofore virtually every meeting since the Compact was organized in 1935 has been concerned with oil problems to which gas was only an incident.

The change in viewpoint arose primarily from the fear that the Federal Power Commission plans to take over the control of gas production within the states, and the companion fear that if this occurs, oil control will follow necessarily.

While most of the states were prepared to participate actively in any program that would forestall federal intervention, Louisiana alone continued its fight to have federal authorities control the use of gas and prevent its exportation from that state to areas where coal or electric power is ample for local needs. Louisiana flatly states that it prefers to keep its gas at home for development of industry there.

This attitude was reflected in the meetings of the legal committee of the Compact by P. H. Frye, chairman and director of the Louisiana Gas Conservation Committee. He protested that Louisiana had no desire to sell its gas, then find it necessary to import coal for fuel.

Favors Federal Control

Sam Houston Jones, former Louisiana governor and the state's representative to the Interstate Compact, declared, in a response to the address of welcome, that the threat of federal control was merely a "straw man." He insisted that he stood for state's rights, but that there was a definite place for the federal government in the picture. He cited the Connally hot-oil act as an example and suggested that it be amended to include natural gas. He declared that he was opposed to the federal control of the production aind gathering of gas, but thought that there was no real threat from this quarter. The only reason for federal assistance that Jones could see lay in the failure of the states to maintain proper conservation programs.

The research and coordinating committee presented a study of the proration formulae in the various states and plans to prepare a standard allocation plan to be used generally. The principal purpose of this program is to provide the best practice, then make that the standard.

The legal committee announced that it has endorsed a study of all the conservation laws which is now being prepared by John Poe, Tulsa attorney.

No Takers

Governor Schoeppel then announced that an open forum would be held on the subject of "A National Policy for Natural Gas." Despite the fact that there were present some 200 representatives of industry and the state regulatory bodies not one man offered to make a statement. Sitting on the rostrum was Louisiana Representative Sam Jones, ready to attack, and others in the room were known to be prepared, but the meeting adjourned without one word on the subject.

Price, the Factor

The greatest conservation factor is not law and regulation. It is not even custom or habit of the industry. It is price.

This was the conclusion reached by E. L. De Golyer, internationally known petroleum engineer, speaking before the Interstate Oil Compact which met at Oklahoma City last week.

He declared that regulation threatens to strangle the development of gas resources if it prevents the use of gas for certain purposes and thus reduces the markets available while a billion feet is flared and wasted daily.

De Golyer said that United States gas reserves exceeded 140 trillion feet, of which 9 percent is solution gas and the remainder free. This estimate includes fields with reserves in excess to 20 million cubic feet.

He found 5 trillion feet in PAW District 1; 17 trillion feet in District 2; 104 trillion feet in District 3; 2 trillion feet in District 4, and 13 trillion feet in District 5. The Texas reserve exceeds 82 trillion feet, he said. Total gas production in 1944 was four trillion feet, 1/35 of the estimated reserve, indicating gas reserves twice those of oil.

Because of limited markets and low prices there is little gas prospecting. Most of the production has been found in the search for oil, De Golyer pointed out, as a result of deeper drilling, volumes of gas in proportion to oil found have increased tremendously. Yet the gas itself has little value.

"Ears willing to listen are being filled with the story that the reserves of gas are not sufficient to justify the construction of new transmission lines or expansion of present facilities," the noted petroleum engineer said. Nothing could be further from the truth. Gas reserves are at an all-time high.

"What is the basic reason for a stagnant condition in an industry concerned wholly with a natural resource which is admittedly an ideal fuel? Can it be the manner of regulation of the transportation?"

De Golyer then pointed out that interstate transportation of commodities other than gas falls under the regulation of the Interstate Commerce Commission, declared it ridiculous that this prime fuel should have been singled out for special treatment.

Manner of Regulation

"Obstructionist activities have continued unabated to the end that regulations are now being contemplated which would control the end use to which gas could be put," De Golyer continued. "Let us do away with this rigamarole. Let the distribution of natural gas within the individual states be a public utility —but under the supervision of the proper state regulatory body as the consensus of unbiased, common-sense thinking dictates. Let the regulation of the transportation of natural gas across state lines from the producing areas to the markets be treated with the same respect and consideration as is accorded other interstate traffic of natural resources. Finally, let us see that the regulation of natural gas within the individual states is placed as contemplated by the constitution of the United States; that is, under the absolute jurisdiction of the proper regulatory agencies of the individual states.

"Federal agencies and all state regulatory bodies should aid the natural gas producers to get all available natural gas into pipe lines so as to increase the natural wealth of the individual states and the nation as a whole. Don't worry about end use so long as we burn a billion feet daily in flares," De Golyer insisted.

He cited the Panhandle, how in 1943, 165 billion feet of gas went from this field to pipe lines, how the take had increased to 364 billion feet by 1944. Meanwhile total gas production in the field had dropped from 859 billion to 746 billion feet in the same period—because the price of gas had increased and there was a greater incentive to save it.

He condemned state regulations that permit waste of gas (up to 2000 feet per barrel of oil) used in lifting oil, and

Oil Officials Studying War Damage to Plants

Headed by Eugene Holman, president, a group of officials and technical experts of the Standard Oil Company (New Jersey) left for Europe June 11 to study the extent of war damage to the company's properties and to fix amounts of rehabilitation costs. Filing of reparations claims will be based on findings of the survey.

Although the company has already filed tentative claims for reparations with the State Department, the investigating group will inquire into the possibility of recognition of claims by various European governments.

Total SONJ reserves against war damage to properties abroad, amounting to $105 million, are not sufficient to finance reconstruction of all prewar plants and facilities in Europe alone, exclusive of losses in the East Indies, where it has a joint interest in Standard-Vacuum properties.

pointed out that this wasted gas has its full value as fuel still.

"One has only to look to California for an example of what can be accomplished in the conservation of natural gas by price. There, flares are past history because gas in the fields commands prices which range from 6 to 12 cents per thousand feet."

Texas Gas Development

Jack K. Baumel, director of production and chief engineer, Oil and Gas Division, Railroad Commission of Texas, traced the history and development of the natural gas industry in Texas and outlined what Texas is doing about conservation.

He emphasized the complex and diverse character of conservation of gas due to the fact that each field requires its own special treatment from the standpoint of regulation and operation.

Legislation has enabled the Texas Railroad Commission to end some of the intolerable and profligate waste of natural gas which was formerly taking place in the State, and thus add to both the life and volume of Texas gas reserves. The more obvious forms of waste consequently have been eradicated, but efforts toward gas proration, which are designed to curtail subtle types of waste occurring within reservoirs through the premature encroachment and coning of water, have thus far met with substantial reverses in the lower courts; however, the recent decision of the Texas Supreme Court in F. M. Corzelius, et al, vs. H. M. Harrell gives the Commission all the power to prorate gas.

Information and knowledge obtained from the establishment of oil proration has not proved of much assistance in the proration of gas because of the inherent differences between oil and gas. Devices which are expedient in the proration of oil do not apply in the proration of gas, Baumel said, and therefore, it has been necessary to start from the beginning.

The specific statutes under which the Commission operates state that they were enacted for the protection of public and private interests against the evils of the production and use of natural gas under wasteful conditions by prohibiting such waste and by compelling ratable production, Baumel declared.

Reviewing some current problems and practice in natural gas conservation, Alec M. Crowell, director of the Mississippi Oil and Gas Engineering Committee, optimistically predicted steady growth in conservation of oil and gas. Practices in the states holding 82 percent of the natural gas reserves of the nation are good. Increasing control is being exercised over high gas-oil ratio wells, more and more gas is being purchased ratably and with better prices at the well head, means have been discovered to free gas from sulphur and condensate, oil operators are cooperating with gas pipe lines by setting up flow schedules so that gas may be more readily available for purchase, and there is every likelihood that the manufacturer of carbon black will offer a competitive price for gas to fill his needs.

Actual practice in the states of Louisiana, Arkansas, Texas, Oklahoma and Kansas, the chief gas-producing states, has demonstrated the desirability of gas conservation from the economic, legal and engineering viewpoint—under state control.

Three types of natural gas reservoir are known: These reservoirs produce (1) oil well or wet gas, (2) gas well or dry gas, and (3) gas from the rapidly growing number of deep, high-pressure, prolific "gas-condensate" reservoirs. A myriad of problems of conservation is presented by these three types of reservoirs, and because oil and gas are so closely related in two of them, must be added the problems of oil conservation. Oil and gas go hand in hand and no proper application of waste prevention practices can be separately made. Numerous gas wells produce both gas and oil and practically all oil wells produce both oil and gas; also in numerous reservoirs the gas is either itself the source of the oil or condensate production or expansion of the gas in solution in the oil is the energy by which the oil is produced. In all such cases waste of gas reduces the ultimate quantity of recoverable petroleum. Further, it can be said that 75 percent of the recoverable oil produced today is lifted from reservoirs by natural gas before any assistance is given by water drive. Therefore, gas conservation in the production of oil is basic.

Production High

Another new all-time record in United States crude oil production was established when output averaged 4,886,115 barrels daily for the week ended June 16. Previous high was 4,872,405 barrels daily during the week ended May 26, 1945.

This production rate was about 23,000 barrels a day higher than that of the previous week.

Mainly responsible for the increase was Kansas, which jumped to 275,150 barrels daily from 250,050 the week before. California rose to 947,800 daily from 944,900, and there were small gains for Michigan, Mississippi, and several other states, while minor decreases occurred in Arkansas, Louisiana, Montana, Oklahoma, and other states. Texas was unchanged from the week before at 2,180,400 daily.

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED June 16	June 9
Alabama	700	500
Arkansas	79,150	79,900
California	947,800	944,900
Colorado	10,950	11,000
Florida	15	15
Illinois	200,200	200,400
Indiana	11,600	11,350
Kansas	275,150	250,050
Kentucky	29,000	28,300
Louisiana	368,000	369,100
North Louisiana	69,150	70,250
South Louisiana	298,850	298,850
Michigan	48,200	46,850
Mississippi	52,000	51,750
Missouri	100	100
Montana	21,565	24,265
Nebraska	900	900
New Mexico	104,400	104,400
New York	12,800	13,550
Ohio	6,350	6,750
Oklahoma	386,350	387,400
Pennsylvania	35,700	36,700
Tennessee	35	35
Texas	2,180,400	2,180,400
Upper Gulf Coast	563,100	563,100
East Texas Field	377,600	377,600
Rest of Eastern Texas	139,850	139,850
Lower Gulf Coast	253,550	253,550
Southwest Texas	82,800	82,800
South Central Texas	21,350	21,350
West Texas	497,550	497,550
North Texas	154,600	154,600
Panhandle	90,000	90,000
West Virginia	7,400	7,250
Wyoming	107,350	107,000
Total United States	*4,886,115	4,862,865

* New all time peak.

Further List of Fields For Oil Subsidy Announced

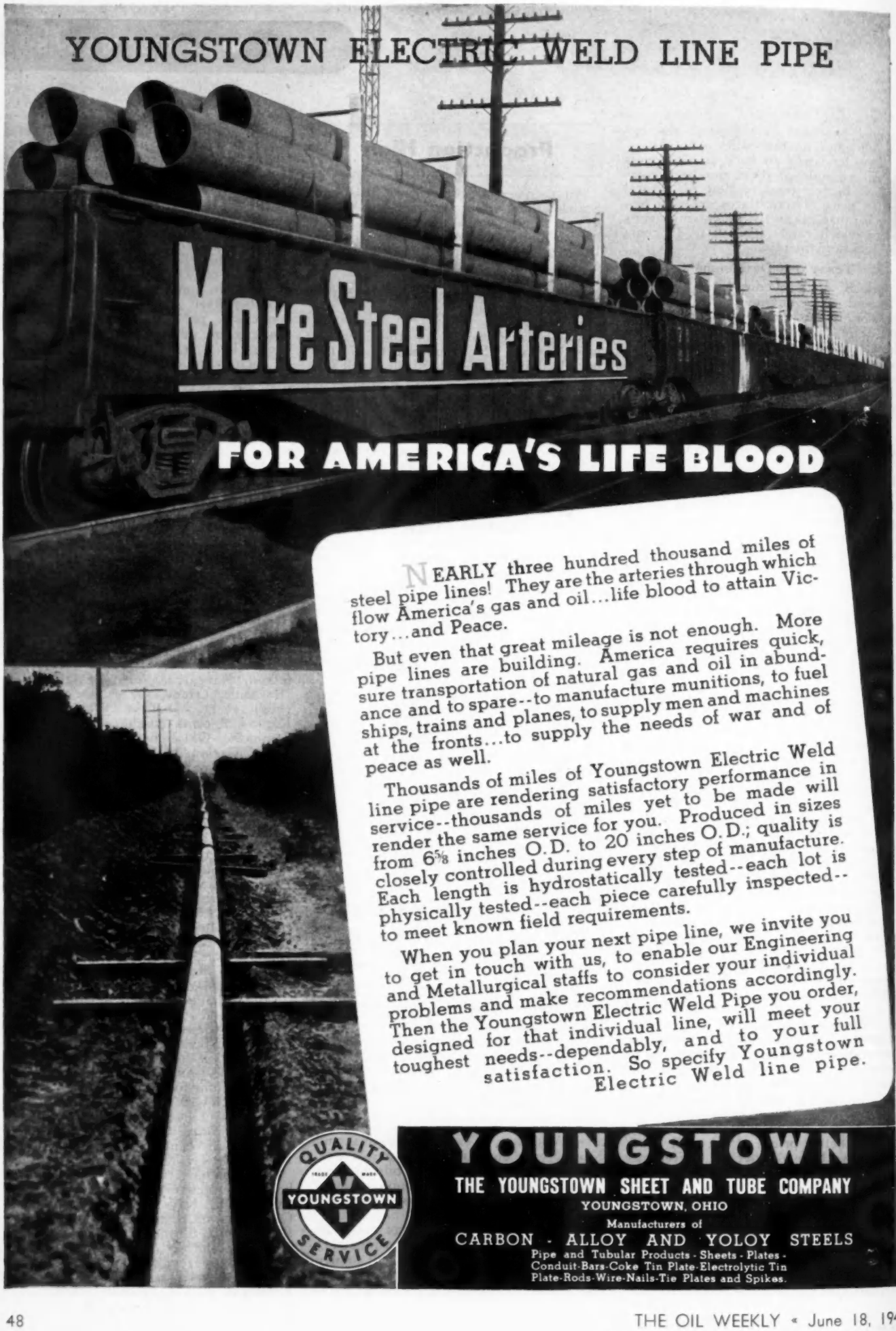
A number of pools have been added to the stripper-well and high-cost premium payment lists by the Office of Price Administration, effective as from June 1.

Among the additions to the lists are: Skiatook Pool, West, Osage County, Oklahoma, 35 cents; Tibbins North (added to Tibbins), Creek County, Oklahoma, 35 cents; McLouth Lime, Jefferson, Kansas, 35 cents (high cost); Pearsonia, Osage, Oklahoma, 11 cents (high cost); Shallow Water, Scott, Kansas, 2 cents (high cost); Wofford, Seminole, Oklahoma, 35 cents (high cost); Garland (Madison), Big Horn, Wyoming, 35 cents (high cost); Shugart North, Eddy, New Mexico, 20 cents; Doyle, 1200-foot zone, Stephens, Oklahoma, 35 cents; Starr, Elk, Kansas, 35 cents; Dopita, Rooks, Kansas, 6 cents (high cost); Empire, Eddy, New Mexico, 35 cents; Gideon, Russell, Kansas, 25 cents; Roxbury Southeast, McPherson, Kansas, 4 cents (high cost); Ploog, Rice, Kansas, 35 cents (high cost); Half Moon, Posey, Indiana, 25 cents; Dallas and Derby, Fremont, Wyoming, 35 cents (high cost); Akard, Johns, Texas, 20 cents; Furman-Mascho, Andrews, Texas, 4 cents (high cost); and Edwards, Crane, Texas, 25 cents.

Other changes include deletion of Angleton, Brazoria County, Texas, and Freeman, Clare, Michigan, the latter being part of the Temple Pool, now under consideration for a high-cost premium; an increase from 14 to 18 cents in high-cost premium for the Getty Pool, Eddy County, New Mexico, and inclusion of the West Earlsboro Pool, Pottawattomie County, Oklahoma (formerly rated at 25 cents) with the Hotulke Pool at 20 cents.

Under consideration for premiums to become effective July 1 are the Burbank Pool, Kay and Osage counties, Oklahoma, 35 cents; Olinda (Upper B), Brea Olinda, Orange County, California, 35 cents, and Rea, Okmulgee County, Oklahoma, 35 cents. It is expected that Deltak Duck Club, Plaquemines Parish, Louisiana, will be deleted.

YOUNGSTOWN ELECTRIC WELD LINE PIPE



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U. S. Industrial System Justified By Wartime Performance

Nation should be skeptical of radical changes in a system which has served so well during peace and war

By L. J. LOGAN, Associate Editor

THE American public probably will go into the postwar period with a general disposition to be more skeptical than formerly regarding politicians' proposals for "reforms" in American business and the American economic system in general. For the existing system has met the gravest crisis of the nation's history with success that has amazed the world, and to increased millions henceforth it will appear pointless to tinker too much with this magnificent economic machinery which has so well served the freedom loving peoples.

Nevertheless, there are under way already efforts to convince the American people of a great need for "economic planning" after the war, and although as yet soft-pedaled, it is contemplated that this "planning" will involve important "reform" of business and industry. There has been already a revival of criticism of the way in which corporations, especially large concerns, are operated. And it may be taken for granted that the perennially "investigated" oil industry will come in for an important share of criticism, because it is one of the largest industries and therefore has some of the largest companies.

Such critics have asserted that large companies represent control of the nation's wealth by a small number of people or have claimed that the officers of such companies exert undue influence on the nation's economic affairs. As a remedy for these alleged situations, they implicitly advocate policing of the activities of the officers of the companies by men of government, who necessarily would have to be nobler and wiser than leaders in industry.

Democratic Institution

Before conceding the validity of the above assumptions or accepting the proffered remedy, the thoughtful American will want to hear more evidence and consider more facts.

Important among the facts which will be found is the one that American corporate industry operates upon the principle of democracy in the same manner that American government operates. To achieve their purposes in the field of government, Americans have chosen political machinery which preserves for each citizen a voice in determining policies to be pursued, by means of the popular vote. If elected representatives fail to execute the will of the people they are voted out and new representatives are voted in. To achieve their purposes in the field of economic endeavor, Americans similarly have chosen an economic system under which they can collectively as well as individually engage in business, small or large, acting through agents who must do their will or be replaced, through the power of the vote of stockholders. Just as the government

But What About the Thousands of Stockholders?

official is the servant of the people in the field of politics, so the business official is the servant of the people in the field of industry or business. They both have the same boss, namely, the people, who have put both of them where they are; and it is not for either to set himself above the other or to presume to encroach upon the other's responsibilities. We the people, as the ultimate boss of all who serve us, politically, economically, or otherwise, must decide how well we are being served and whether or not there should be any re-defining of the spheres of responsibility as between our different agents.

At this particular juncture in our affairs, with the wartime achievement of United States industry fresh in mind and also with many instances of governmental mistakes and inefficiencies not forgotten, it would seem that the public would not be enthusiastic for taking away responsibilities from industry and transferring them into the hands of government representatives.

Proud Record

The oil industry particularly has every right to be proud of its wartime record as well as its prewar functioning which made it able to fulfill the war responsibilities so excellently. When it entered the war, the industry was big—one of the country's biggest. It was the composite of many companies and individual operators, all of whom had fitted themselves into this vital economic endeavor in peacetime and all of whom worked together effectively in the emergency. Highest praise is due the smaller companies and individual operators, and similarly high commendation is due the larger companies, whose backlog of costly research, rich crude reserves, know-how in refining, experience in transportation, and capital for providing urgently needed plants were important assets for winning the wars. So complicated and costly were some of these assets that as a practical matter they were available only through larger companies, in which many investors had pooled their capital and distributed their risks. It commonly takes $50,000 to $100,000 to drill a deep well, which stands a high chance of being dry, and it takes $4,000,000 to build a refining unit that 25 stillmen can operate, with obsolescence rapid, while pipe lines and tankers are investments running into millions of dollars. One oil company has pointed out that assets of $20,500 stand behind each of its employes, on the average.

Therefore, the oil business by its nature is essentially big business and characterized in considerable part by multiple ownership through larger companies. The industry is so big in fact, and serves so many millions of people, that the combined resources of 1½ million investors are needed, and their investment totals more than 17 billion dollars, while the marshalling of these vast resources toward the end of providing the people with essential products involves the functioning of not merely a few big companies as in some industries, but a score of competing "major" companies as well as many smaller concerns and individuals. How effectively this outstanding example of free, competitive enterprise works out for the advantage of the consuming public is attested by the relative cheapness of gasoline and other petroleum products. Whatever may be said of the industry, it cannot be seriously denied that the industry consistently has given the consumer exceptionally good values. And this is the ultimate test of how well the industry is fulfilling its responsibility of whether the economic influence exerted within the industry is good or bad.

Public Affected

Insofar as the oil industry is concerned, any tampering with the machinery through which it functions at present would involve the management of the private property of at least 1½ million citizens who directly own an interest in the industry, as owners of common stock of oil companies; not to mention additional millions who indirectly have a stake in the industry in various ways as in the form of life insurance policies partly backed by investment in oil company stocks or bonds.

Presented herewith is a tabulation in which it is shown that the common stock of 38 oil companies as of December 31, 1944, was held by 1,338,315 owners. While the list is fairly complete for the larger companies in the industry, it is not all-inclusive, and omits for example Amerada Petroleum Corporation, Houston Oil Company, Mid-Continent Petroleum Corporation, Panhandle Producing & Refining Company, Plymouth Oil Company, Skelly Oil Company, Texas Pacific Coal & Oil Company, and others in addition to a great many small oil firms. The tabulation serves, however, to confirm various published reports that there are around 1½ million investors in the industry.

It is true that there is considerable duplication in such a tabulation, for an owner of stock in one oil company may also own stock in another or several other oil companies. However, such duplication may be compensated by the fact that in many cases a recorded owner is an insurance company, institution, or other holder actually representing multiple individual owners. For example, Humble Oil & Refining Company's 10,033 stockholders on record at the end of 1944 included 50 insurance companies, 49 educational, charitable, and religious organizations, 711 trustees, guardians, executors, and administrators, and 429 corporations, partnerships, and brokers. Those 1200 accounts represented an ownership of more than 10 percent of the Humble stock, and many individuals share in the benefits of the ownership by such accounts.

Wide Distribution

While ownership of oil company stocks is distributed among many owners, it also is well distributed geographically. Barnsdall Oil Company, for example, with 16,314 stockholders at the close of 1944, has stockholders residing in every state in the Union and many foreign countries. Nearly every state in the Union is represented among the stockholders of relatively small Kirby Petroleum Company, along with five foreign countries. Another small firm, North Central Texas Oil Company has stockholders in 25 states and the District of Columbia. Phillips Petroleum Company's 46,057 common stockholders represent an increase of 11,877 during the past 10 years, while the number of shares issued and outstanding increased 477,537 shares. Of the present total shareholders, individual owners as opposed to brokers, companies, and other organizations constituted 95.07 percent, holding 62.96 percent of all the shares issued and outstanding. Standard Oil Company of California's 83,281 stockholders at the end of 1944 compared with 71,667 at the end of 1938.

Standard Oil Company (Indiana) at the end of 1944 had 96,237 stockholders, and in its annual report to them pointed out that there was a pronounced inclination of social agencies, trusts, corporations, and other institutions and fiduciaries to invest in the company. The company cited these statistics on its stock ownership:

Group or Classification	Number of Stockholders at End of 1944
Charitable Institutions	136
Churches and Other Religious Organizations	112
Civic Organizations	32
Clubs and Fraternal Organizations	36
Libraries	11
Museums	6
Hospitals	69
Cemeteries	17
Educational Institutions	158
Research Societies	11
Unidentified Endowments and Foundations	21
Insurance Companies and Protective Organizations	141
Other Corporations and Partnerships	1,423
Trusts and Trusteeships	6,796
Other Fiduciaries	1,861
Men	39,641
Women	39,096
Joint Accounts	6,123

The Standard of Indiana annual report further stated that the average number of shares per stockholder was 159, and that no stockholder owned more than 5 percent of the total.

The Atlantic Refining Company at the end of 1944 had 25,968 stockholders owning the 2,663,998 outstanding common shares, an average of about 100 shares per stockholder. With exception of half a dozen brokerage firm nominees, each holding shares for a large number of individual stockholders, Atlantic's largest stockholder owns considerably less than 1 percent of the common stock outstanding.

Sinclair Oil Corporation, whose 12 million shares are held by 86,730 individual owners, has no very large holders of stock, the largest being about 150,000 shares. The ownership of the company is in the hands of a great many thousands of individuals, about half of whom own less than 100 shares.

Continental Oil Company's stock is widely distributed, averaging 170 shares per stockholder for the 27,498 holders of voting shares at the end of 1944, and at the annual meeting held recently the number of shares voted was 54 percent of the outstanding voting shares, although 25 percent would have constituted a quorum. Such wide distribution of stock ownership and casting of vote by over half the voting stock, found in many other oil companies as well as this one, assures operation upon a democratic basis and in accordance with standards of efficiency and ethics approved by the majority of numerous stockholders.

Sunray Oil Corporation has published a chart showing that 68 percent of its 20,000 stockholders own 1 to 100 shares, 27 percent own 100 to 500 shares, and only 5 percent own more than 500 shares.

The Superman Myth

In advocating "economic planning" which would involve the placing of new governmental restrictions on business as now constituted, the charge has been

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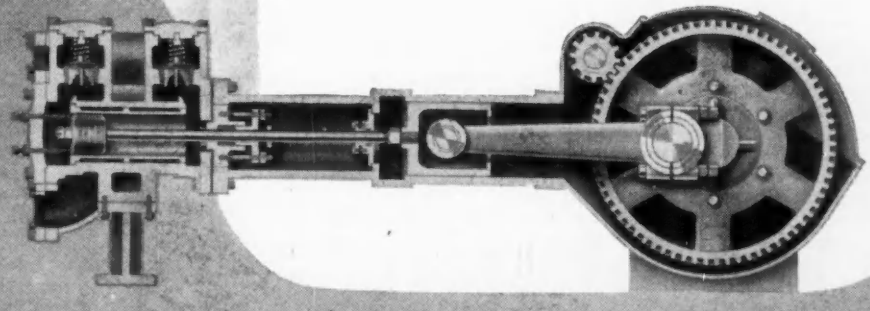
- Alloy Steel Cranks Set at 90° Angle
- Alloy Steel Lapped Herringbone Gears



GASO PUMPS

for every oil industry need

made that a "handful" of executives of large companies have it within their power to make decisions vitally affecting economic conditions for millions of people. To this assertion the answer, based on the situation in the oil industry, is that these "planners" are ascribing to company officials superman powers which they do not possess. Those in control of a company could not make such far-reaching economic decisions simply through the action of such company even if they had the necessary mental brilliance because numerous vigorous competing companies would not surrender their economic sphere to a would-be dictator. Nor could they combine their wits and assets with those of the managements of other companies to effect a monopolistic dictatorship because of the anti-trust laws and the Department of Justice, not to mention the thousands of stockholders to whom they would have to answer for unethical or illegal acts.

In its survey made in 1939 the Temporary National Economic Committee found that in a group of 18 major oil companies there were only six in which more than 50 percent of the common stock was concentrated in the hands of the 100 largest stockholders. In the others, the proportion of stock held by the 100 largest holders ranged down to 21 percent. However, many of these larger owners of oil company stock were institutions or other owners representing numerous individuals. While each of the six companies first referred to were under control of a limited group of owners, the six were competitors of each other as well as the rest of the industry, and neither conceivably could dominate the whole industry. Among the remaining companies, control through ownership of stock was spread out more widely, and any stockholder or group of stockholders wielded correspondingly less influence on such company's policies and the industry in general.

Democracy Grows

As cited in several individual instances above, there is a pronounced trend toward more and more stockholders in possession of the stocks of oil companies and therefore more and more democracy in the running of the business. This increasingly wide distribution of ownership of the industry represents purchases of stock by many oil company employes who thereby gain an interest in the companies for which they work, and it represents purchases by many consumers of petroleum products who can share in any profits from their own purchases. In the case of employe purchases of stock, a very wholesome thing is involved, for to the extent that he gains an interest in the company, the employe is self-employed, and the effort which he puts forth is for himself as well as other owners of the business. Conversely, one of the important reasons why any attacks on larger companies should be tempered is that excessive restrictions on such companies tend to make it impossible for the company to expand and take its employes into "partnership." To draw a line beyond which a company cannot expand or progress is to shut the door of opportunity for proprietary interest in the company for hundreds or thousands of its employes as well as other investors.

In so far as any company, large or small, has wide distribution of the ownership of its voting stock, it approaches true democracy in business; and the more of such companies there are in an industry, the nearer the industry as a whole approaches the ideal of a democracy, which is the greatest good for the greatest number of people.

There is no denial here that masses of stockholders may appear apathetic toward the management of their companies, sometimes giving too little thought to the signing of proxies, and accepting too readily the will of dominant personalities in the existing management. However, it has been demonstrated again and again that the stockholders do voice their will emphatically to their officials by voting their stock when important matters of company policy are in controversy. It is the same as in government. The voters appear apathetic when no real issues are involved, but when important matters are at stake, they rise up and voice their will in mandates to their public office holders.

No Real Conflict

As long as the democratic principle is achieved and promoted in industry as well as in government, there is no real conflict between larger companies and smaller companies. The size of the company becomes merely a measure of the service it can and does perform; a measure of the capital needed to provide the services it undertakes, whether relatively specialized or localized or entailing heavy investments in which multiple owners must join hands.

Certainly the democratic principle is well exemplified and also well justified in the oil industry, where numerous large and small companies try to outdo each other in giving the consumers good values, where there is widely distributed ownership of the stock of individual companies, and where the ultimate benefit for the consumer is plenty of petroleum products at prices remarkably low.

Number of Owners of Common Stock In a Group of Oil Companies

Name of Company	Number of Owners of Common Stock
American Republics Corporation	2,933
Argo Oil Corporation	4,787
The Atlantic Refining Company	25,968
Barnsdall Oil Company	16,314
Bishop Oil Company	324
Cities Service Company	347,917
Continental Oil Company	27,498
Deep Rock Oil Corporation	3,000
Fohs Oil Company	565
Gulf Oil Corporation	18,189
Humble Oil & Refining Company	10,033
Kirby Petroleum Company	1,379
Lion Oil Refining Company	2,939
The Louisiana Land and Exploration Company	3,602
Maracaibo Oil Exploration Corporation	1,558
The North Central Texas Oil Company, Inc.	276
The Ohio Oil Company	31,151
Phillips Petroleum Company	46,057
The Pure Oil Company	31,235
Quaker State Oil Refining Corporation	1,975
Salt Dome Oil Corporation	2,800
Seaboard Oil Company of Delaware	2,628
Shell Union Oil Corporation	15,406
Sinclair Oil Corporation	86,726
Socony-Vacuum Oil Company, Inc.	120,805
South Penn Oil Company	6,224
Standard Oil Company of California	83,201
Standard Oil Company (Indiana)	96,237
Standard Oil Company (New Jersey)	155,048
The Standard Oil Company (Ohio)	6,175
Sun Oil Company	8,500
Sunray Oil Corporation	20,000
The Texas Company	92,403
Texas Gulf Producing Company	5,200
Tide Water Associated Oil Company	25,302
Union Oil Company of California	32,227
Universal Consolidated Oil Company	1,756
Woodley Petroleum Company	844
TOTAL, 38 above companies	1,338,315

Returning Veterans to Be Aided by The Texas Company

A leave of absence will be granted employes of The Texas Company who return from military service and who desire to take advantage of the Servicemen's Readjustment Act of 1944 (the G.I. Bill) to pursue studies that will benefit them in their future association with the company. Loans without interest will be extended to these veterans in cases where the amount available under the law may be inadequate.

The leave is for one year, subject to extension at the end of each year, provided the employe is making satisfactory progress in his studies. The educational leave is available to any employe who had at least four months' service with Texaco before entering military service.

The employe's benefits under the company's group life insurance, pension and hospitalization plans, will continue as though the employe were in active company service.

Upon the employe's return to company service, full consideration will be given to the knowledge and skill he acquired while on educational leave and to his accumulated seniority with the company, including the period of his leave. More than 5000 men and women of The Texas Company are on military leave of absence.

"Twister" Wrecks Derrick

A freak Oklahoma twister wrecked a derrick and separator and tore away connections at Cities Service Oil Company's Abernathy 1, SE SW SE 13-3n-2w, important wildcat discovery in Garvin County, forcing the crew to shut in the big producer. This was the second "big blow" to hit the immediate area, the first high wind striking the site about 60 days ago when it leveled off the area where the wildcat was finally located, saving the crew a lot of work. The discovery is about 1½ miles east of Antioch and before it was shut in for repairs had flowed 110 barrels of oil in 15 hours through a small choke.

Development of Mercedes Field Is Being Speeded

With four rigs now in use in field development drilling operations, S. A. P. Las Mercedes (The Texas Company) has speeded up its program for the Mercedes field, 22 miles west of Valle de la Pascua in northern Guarico, Venezuela. Eight producers have been completed and shut in at Mercedes, with one confirmed dry hole and one well (No. 10) reported to be temporarily abandoned on May 16, after going to 4456 feet. All completions in the field have been made at less than 5000 feet.

On the above date, rigging up was in progress at Mercedes 11, Mercedes 12 was drilling ahead at 3954 feet, Mercedes 13 was at 1108 feet, locations were being cleared for 14 and 15, and 16 was drilling at 1005 feet. Wells 13 and 16 were spudded during the first week of May.

Present objective is the proving of maximum producing acrease of the field on a double step-out spacing grid. Drilling on inside locations will not be undertaken until the boundaries of production are established or a pipe line outlet becomes a certainty.

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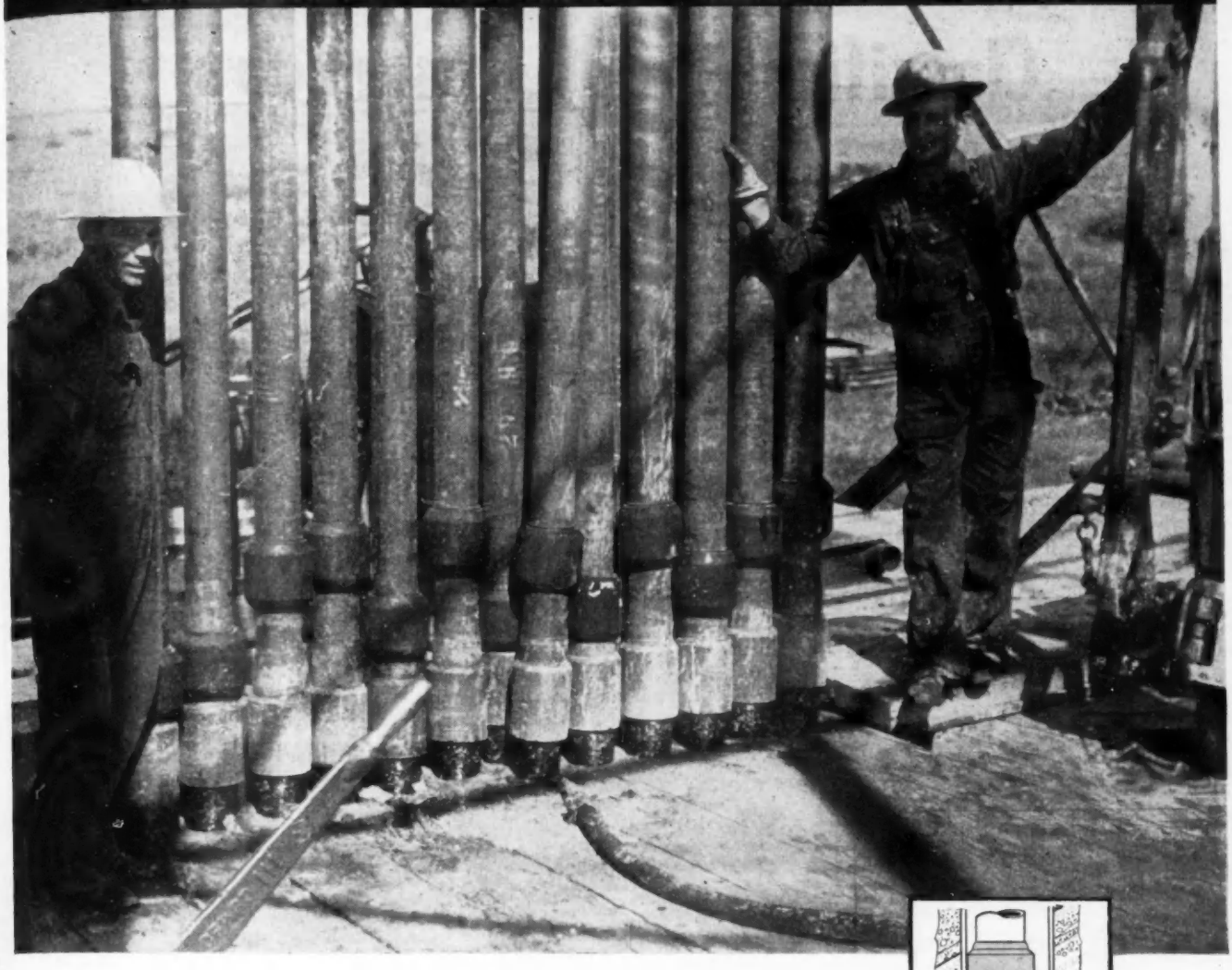

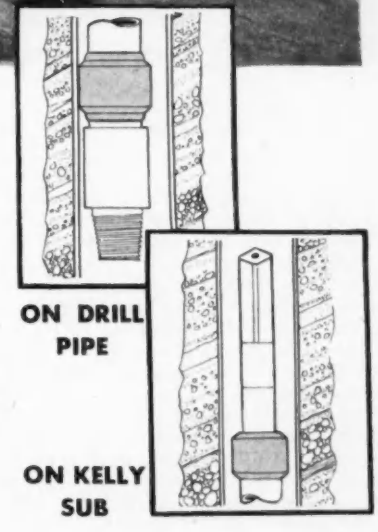

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Genetic and Morphologic Classification of Reservoirs

By SYLVAIN J. PIRSON
Head of Department of Petroleum and Natural Gas
The Pennsylvania State College

MANY classifications of oil and gas pools[1] have been published in the past and the present one does not claim any particular advantages, nor does it lay claim to any higher degree of completeness, nor of freedom of criticism. The present classification and tables are proposed with the following aims in view:

1. As a ready reference in table or chart form presenting at a glance the main conditions under which the reservoir was formed and how it may be recognized by its geometry or external morphology.

2. As a helping tool to the geophysicist so that he may have at hand as a constant reminder the many possibilities under which oil and gas accumulations may be encountered.

3. As a helping tool to the reservoir engineer so that he may have a chart in which to pigeonhole the particular reservoir with which he is dealing and thereby infer the expected performance of the field as a whole.

The accompanying tables are presented as a ready reference and as a helping tool to the geophysicist and reservoir engineer

The present classification is divided into three parts as follows:

I. Petrologic or Stratigraphic Traps.
II. Combination Petrologic and Structural Traps.
III. Structural Traps.

In general, it was endeavored to divide each main class genetically into subclasses, and each subclass morphologically into sub-sub-classes. Whenever possible, the geometry of a trap is represented by profile and plane view diagrams with the introduction of as many genetic elements as possible. This is particularly true of some of the petrologic type reservoirs where an understanding of the paleogeography contemporaneous to the formation of the sand body is especially useful. A column describing the main features of the trap is added to the right of the sketches; in general they are so selected as to give the diagnostic features recognizable from depth measurements.

The last column gives a series of example pools. This makes no claim of being exhaustive and complete. An effort was made to select examples as typical as possible though it is realized that complex factors played a role in trapping the oil and gas in many of the examples cited.

I. Petrologic Traps

Petrologic traps (this term was suggested by P. D. Krynine) are better known under the name of "stratigraphic" traps which expression is unfortunately open to objections as this type of trap does not necessarily result from a process of layering during deposition but is often the result of a reworking and concentration process from previously deposited sediments or of post-depositional changes within the rock (Diagenesis). The term "petrologic" trap as well as its accepted equivalent (stratigraphic or lithologic trap. is particularly hard to define and presently it seems best to define it negatively. Inasmuch as a trap of this nature is never wholly devoid of structural elements, one may say that a petrologic trap is that one in which late structural deformation plays a subordinate role in the accumulation, migration and retention of oil and gas.

Traps where late structural effects are at a minimum are primarily associated with shore-line processes. Accordingly, the writer has made wide use of the classical work dealing with this subject, namely, D. W. Johnson's "Shore Processes and Shore Line Development." According to Johnson, shore lines may be classified as follows:

1. Shore lines of emergence or regressive.
2. Shore lines of submergence or transgressive.
3. Fluctuating shore lines.
4. Stable shore lines.

In the normal process of sedimentation within a geosyncline (where the majority of our present oil and gas fields are located) the predominating type of shore line to be expected is the transgressive shore line. Hence, one would expect to find statistically more oil fields in sand bodies having the character of a submerging shore line. Oddly enough, the greater number of shore line oil fields have been interpreted as having been formed along regressive shore lines, the most commonly interpreted type being the offshore bar type of reservoir.

Due to the almost complete absence of structural features, the discovery of fields of this class is a random proposition though once discovered and the type recognized a reconstruction of the paleogeography permits a more systematic drilling campaign for new fields of the same type.

II. Combination Petrologic-Structural Type

The border line between purely structural traps and petrologic traps is a very diffuse one, and depending on personal opinion, one may make it very narrow or very boad as there is hardly a petrologic trap where structural elements are absent.

In the present classification are included those traps where structure plays a role substantially equivalent to stratigraphic and lithologic features in controlling the accumulation. migration and retention of oil and gas.

Two main classes are provided depending on the operating truncation process which may be erosional or deformational. Fields associated with erosional truncation have proved some of the most prolific pools ever discovered. Due to their association with structure below unconformities, it has been possible to prospect for these fields by ordinary structural means through the ultimate delineation of the field has to be left largely to random drilling.

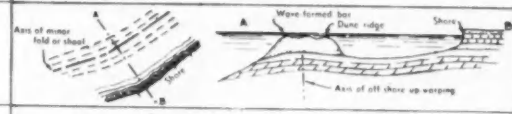
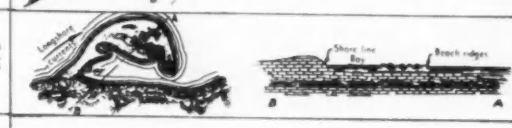
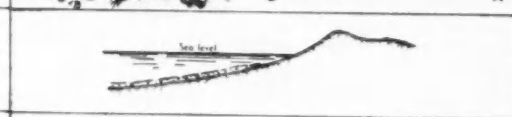
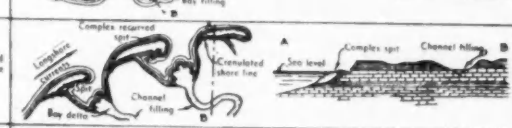
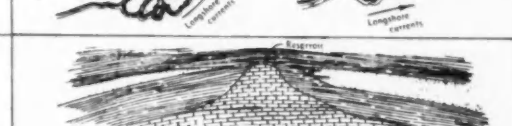
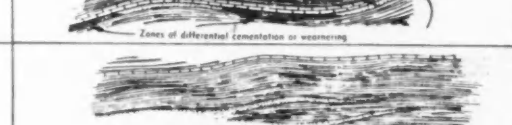
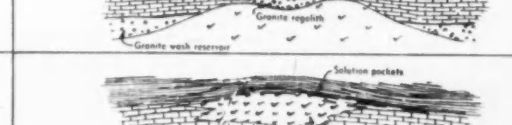
Under the term "deformational truncation" are classed those fields where plastic deformation with stretching and mechanical squeezing of the reservoir formations to their ultimate rupture plays an important part in providing the reservoir closure. Reservoirs of this type are common in regions where compression (not necessarily intense) of unconsolidated or semi-consolidated sediments (flysch and molasse) results in their plastic deformation rather than bending and shearing. This type of deformation is usually called "alpine" but is often encountered on a small scale on the flank of salt domes and in sediments deposited in a rapidly sinking geosyncline (Andarko and San Joaquin basins).

III. Structural Traps

The best known of all oil and gas traps are structural, so well known in fact that they have prejudiced the oil men and even the geologists into believing that all commercial oil accumulations are primarily structural. The literature of the past is replete with articles where the authors went to great argumentative length to prove that accumulation was controlled by structure where we now obviously recognize the control to be by stratigraphy and lithology. It is

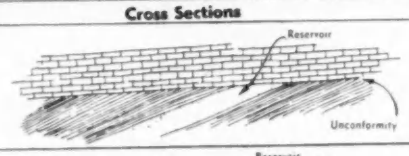
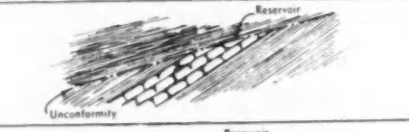
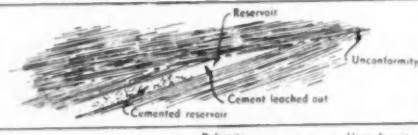
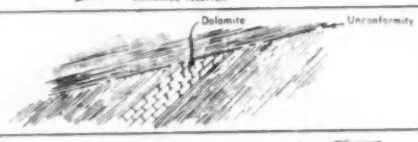
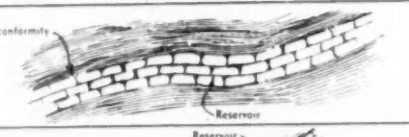
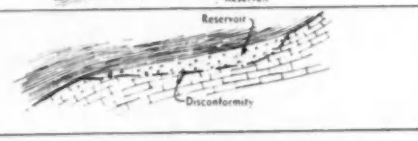
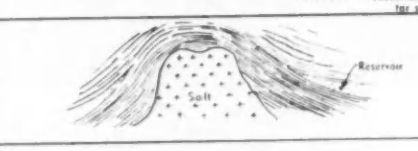
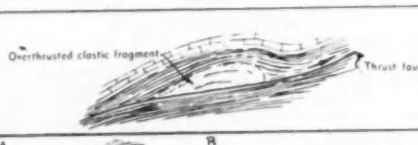
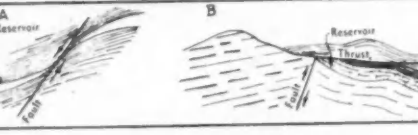
GENETIC AND MORPHOLOGIC CLASSIFICATION OF OIL and/or GAS RESERVOIRS

I. PETROLOGIC OR STRATIGRAPHIC TRAPS

Paleogeographic Loci & Genetic Processes			Diagrammatic Maps & Cross Sections	Diagnostic Features	Examples
1. Lensing sand or sandstone (depositional trap) Associated with fossil shorelines, strand line or coastline Deposition of sediments in a sorting environment	A. Regressive fossil shoreline (emerging shoreline)	a. Offshore bar or lentil or barrier Barrier beach, sand reef		1. Long and narrow sand body, convex on top and plane on bottom 2. Abrupt termination and coarser clastics on sea side, also smooth edges 3. On land or lagoon side, fine clastics mixed with continental deposits, ragged edges and gradual termination	Shoestring pool (Green wood, Butler Cowley Counties, Kansas (6); Olympic pool, Okla. (1); Music Mountain pool, Fla. (2); 2nd Berea sand pools, Ohio (3); 2nd and 3rd Venango sand pools, Pa. (4 and 5); Red Fork Shoestring pools, Okla. (8);
	B. Regressive and or transgressive fossil shoreline	a. Deposition of sand over offshore upwarping or shallows or shoals (submarine dune ridges)		1. Less elongated than offshore bars, may be circular 2. Quasi-symmetric deposition of clastics 3. Possible existence of multiple ridges by wind action (dunes) 4. Related to minor flexure within sediment through tectonic activity or differential compaction	Shoestring Gas Fields, Michigan. (7); Red Fork "Basin" Tulsa County, Okla. (8); 3rd stray sand (Venango Dist. Pa.) (5)
		b. Beach ridges and dunes (aeolian dune ridges)		1. Well sorted rounded sand grains, pitted by impact 2. Concentric distribution of sand layers within the dune ridges 3. May strike at any direction to the shore line depending on predominant winds, forms crescent shaped lenses	Possibly 3rd stray sand (Venango Dist. Pa.) (5); Miocene sand, Maud field, Samanale area, Okla. (9); Possibly Wilcox sand Central Louisiana (10);
		c. Cuspate bars and cuspate foreland bars with dune ridges, beach ridges		1. Series of curved ridges, converging near coast at one end and parallel at other end where they also reach coast 2. Relatively flat bottom 3. Lagoon enclosed, no tidal inlet	Burbank pool, Oklahoma (6) (?)
		d. Beach plain with prograding or retrograding compound spits forming beach ridges, sand dunes, separated by fine sediments in ponds, lagoons, marshy swales		1. Series of curved ridges parallel to one another and separated by thinner and finer lagoonal deposits 2. Relatively flat plane at the bottom 3. Forms a bay partly inclosed by recurved spits but with tidal inlet left open	Burbank pool, Oklahoma (6)
	C. Transgressive fossil shoreline (submerging shoreline) Should be most common since this is predominating phenomenon in formation of a geosyncline	a. Marine beach veneer, beach veneer basal conglomerate on shoreline terrace		1. Sheet like formation with even straight edges, marking limits of transgression 2. Usually associated with very slow transgression with very slowly submerging shoreline	Wherry pool, Kansas (Soay Conglomerate (?) (11);
		b. Drowned valleys and river channel filling, branching bay filling in bay delta		1. Meandering sand body with plane top and concave bottom 2. Rounded gravel on bottom 3. Cross bedding in bay filling	Bush City field, Kansas (12)
		c. Headland beach and spit with landward deflected, hooked or recurved spits, simple or compound		1. Lenticular sand body with parallelogrammic cross section 2. Farthest end in the direction of longshore currents is usually curved or completely recurved landward within the ancient bay 3. Channel filling and bay delta often associated with it	Cherry Grove, Baltitown and Gartland pools, Pennsylvania (13)
		d. Formation pinchout in rapidly sinking geosyncline: 1. Marine, or non-marine (outwash flood plains) 2. Seal by overlying impermeable cover. Not lateral permeability variation		1. Found mainly in rapidly sinking basin Reservoir rock may be marine or not 2. Reservoir rock is poorly sorted as to mineral composition, size and shape	1. Cat Bank oil and gas, Montana (14); Kern Front field, Calif. (15) 2. Lower Dutt zone, Edison field, California (16)
		e. Bayhead-beach-bayber tombolo Looped bar behind fossil island stone reefs		1. Looped bar arcuate or crescent shaped sand body convex toward shoreline 2. Tombolo at right angle to old shoreline	No oil or gas fields recognized as yet in this type of reservoir
	D. Fluctuating shoreline	Interfingering of terrigenous and organic sediments		1. Porous (weathered) chemical or organic reservoir rock (dolomite and gypsum) 2. Non porous fine grain clastic shale acting as seal for reservoir 3. Lateral gradation from dominant chemical or organic sediments to increasingly clastic sediments	Hugoton gas field, Kansas and Oklahoma (17); Glenn pool, Okla. (18)
	E. Stable or neutral fossil shoreline	a. Delta: 1. Lobate type		1. Top-set beds—fairly horizontal 2. Fore-set beds—inclined sometimes very steeply 3. Bottom-set beds—fairly horizontal 4. Considerable cross bedding, lenticularity and alternation of sands and shales 5. Absence of intense long shore currents	Bradford field, Pa. (19) Grand Valley field, Pa. (4)
		2. Arcuate type 3. Cuspate type		1. Presence of long shore currents More intense in the cuspate type 2. If rivers sufficiently closely spaced may form a long, coalescing series of deltas prograding seaward	No oil field so far has been found in this type of reservoir
		b. Coral reefs		1. Sharp overgrowth on reasonably level underlying formations often limestones) 2. Coral growth requires a relatively well protected shore from the destructive action of waves	Seymour pool, Baylor County, Texas (20); Captain Reef fields, W Texas and New Mexico (21)
2. Lensing sand or sandstone (not necessarily associated with fossil shorelines	A. Disappearance of porosity (primary or secondary) by lateral change to non-permeable chemically cemented rock by calcite, silica, anhydrite, etc			1. Reservoir may be formed by primarily differential cementation. 2. Cementation may be associated with structure, absent over anticline and present in synclines, but not necessarily so 3. Cement may be secondary silica and or calcite, differentially precipitated with later removal of calcite cement	McClosky pools, Ill. (22) Oriskany gas pools, W Va., Pa., and N Y (23)
	B. Disappearance of porosity by lateral change to non-permeable fine grain clastic sediments (shales) or chemical or organic sediments			1. Lateral change to limestone or shale, often abruptly 2. Shale partings present in sand hindering lateral flow of reservoir fluids	Davenport pool, Okla. (24) Glenn pool Okla. (18)
3. Lensing pockets of weathered rocks Connected with fossil land surface or unconformities	A. Granite wash and fossil soils			1. Associated with buried granite ridge or mass 2. Reservoir rock is result of weathering rocks in in place 3. Buried residual soil or regolith	Amarillo gas fields, Texas Okla. (25)
	B. Solution pockets in igneous rocks With primary porosity vesicular and secondary porosity weathering in various proportions			1. Associated with easily weathered igneous rocks, usually basic (Serpentine, gabbro, etc. as laccolith injection within sedimentary rocks)	Lytton Springs, Texas (26)

GENETIC-MORPHOLOGIC CLASSIFICATION OF OIL-GAS RESERVOIRS

II. COMBINATION PETROLOGIC & STRUCTURAL TRAPS

Genetic Processes				Cross Sections	Diagnostic Features	Examples and References
Erosional Truncation	1 Associated with overlap depositional seal in erosional unconformities	A Angular unconformity (Reservoirs of this class associated with anticlinal flank truncated zones)	a With primary porosity Knife edging of formation		Local truncation, usually associated with sharp anticlinal structures	Oklahoma City pool Okla.: Wilcox and Simpson sands (27)
			b With secondary porosity developed through: 1. Leaching of rock cement		1 Limestone dissolved by meteoric water or shallow transgressing sea waters along jointing or tension fissures	Oklahoma City pool: Arbuckle ls. (27) Most siliceous lime pools, Kansas W. Edmond pool (Okla.) (28)
			2. Leaching of cement 3. Replacement (dolomites)		1 Calcareous cement leached out by meteoric water or shallow transgressive waters over unconformity	East Texas field—Woodbine sd (29)
					1 Porosity developed as void spaces between crystals as result of crystal shrinking through dolomitic replacement of crystalline limestone 2 Fractures, solution cavities often present	W. Edmond pool—Bois d'Arc zone (28)
		B Disconformity or parallel unconformity	a With secondary porosity 1. Leaching of rock cement 2. Replacement		1 Porosity developed by leaching of rock (Limestone or cement (calcite) or by replacement (dolomite) of reservoir rock. Usually associated with slight flexures of disconformity surface	Lima, Indiana fields—Trenton ls. (30) Yates field (Texas) (31)
			b With porosity in residual products of weathering		1 Reservoir consists of reworked detrital material from fossil land surface 2 Reservoir rock has no well-defined stratigraphic position, is presumably associated with terrace of low relief	Wherry pool (Kan.—Sooy corp. (11)
	2 Associated with organic seal				1 Seal provided by tarry residuum formed by natural distillation of oil escaping from reservoir	Midway Sunset oil field (Calif.) (Surface seal and Subsurface Seal) (32) Oklahoma City—Arbuckle zone (Subsurface seal) (27)
Deformational Truncation	1 Pinch out by squeezing	A Salt dome flank sands			1 Associated with most piercement type salt domes and distributed around periphery of salt plug	Most piercement type salt domes—Texas and La. Gulf Coast (33)
		B Diapir folds			1 Associated with quasi-horizontal thrust-faults in regions of Alpine-like orogeny 2 Terminated by blunt end in direction of displacement and thinning in opposite direction (tear drop shape)	Galician and Roumanian oil fields (33) Folds in Coalinga District, Calif. (34)
	2 Bevelling by stretching and ultimate rupture through plastic deformation	A High angle fault B Low angle fault (thrust fault)			Faulting may be accompanied by thinning and stretching of reservoir. This is a common occurrence in salt dome flank sands	A: W. Columbia Salt Dome, Tex. (35) B: McKittrick area, Mc Kittrick oil field, Calif. (36)
	3 Fracturing and fissuring	Shale fissure pools			1 Fissuring accompanied by slight flexure in encasing rocks 2 Production very spotty and from widely variable levels in neighboring wells (No intergranular porosity)	Florence field, Colorado (37)

Numbers in the last vertical column of the above chart (as well as charts on pages 55 and 58) refer to Reference Table, page 59.

perhaps not impertinent to say that the anticlinal theory of I. C. White has done more harm than good in the developmentof oil geological thoughts and in furthering the oil discovery efforts. The anticlinal theory is still so well anchored in the oil men's minds that we have not as yet developed any routine stratigraphic prospecting tools, neither geological nor geophysical and those which are advocated presently are looked upon with askance by the oil profession. In the words of W. E. Pratt, "We have looked so much for structures that we have failed to look for oil."

Notwithstanding the overemphasis placed upon structural traps as reservoirs, they play and have played an important role in building up the known reserves of oil in the ground. For the purpose of this classification they are divided into four main classes according to deformation, changes of dip, faulting and combination folding and faulting.

The process of strata deformation may be compressional, gravitational, intrusional or rejuvenated uplifting.

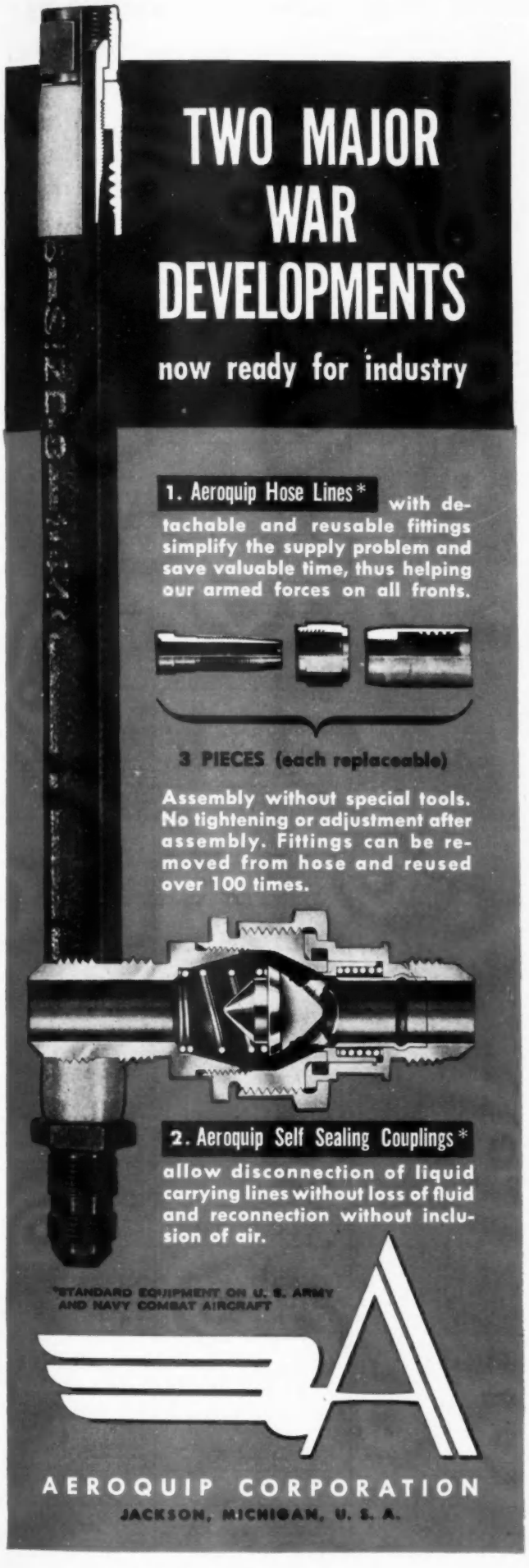
Accumulation within deformed strata may be due to change in dip resulting in the formation of terraces, saddles and plunging anticlines.

Closure by faulting may result in a large number of complex structures, of which only four simple types are represented.

Closure by combination of folding and faulting may acquire all degrees of complexity and most of our structural reservoirs exhibit this complexity to varying degrees.

Acknowledgments

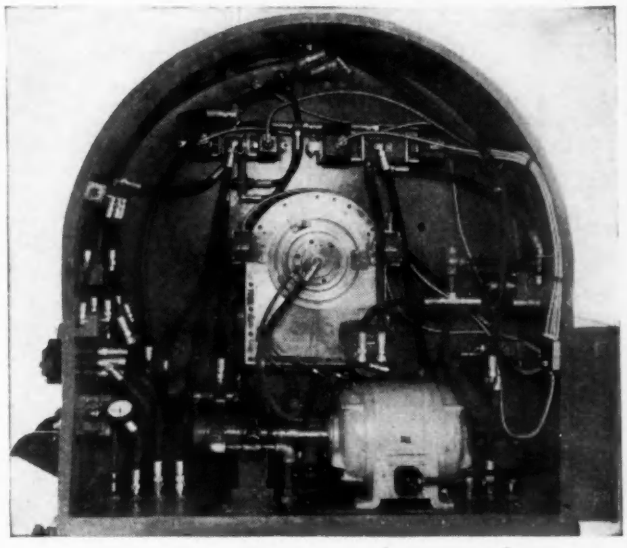
The writer gratefully acknowledges the help and constructive criticisms of Professor C. A. Bonine and Dr. F. Swain and particularly of Dr. P. D.


TWO MAJOR WAR DEVELOPMENTS
now ready for industry
1. Aeroquip Hose Lines* with detachable and reusable fittings simplify the supply problem and save valuable time, thus helping our armed forces on all fronts.
3 PIECES (each replaceable)
Assembly without special tools. No tightening or adjustment after assembly. Fittings can be removed from hose and reused over 100 times.
2. Aeroquip Self Sealing Couplings* allow disconnection of liquid carrying lines without loss of fluid and reconnection without inclusion of air.
*STANDARD EQUIPMENT ON U. S. ARMY AND NAVY COMBAT AIRCRAFT
AEROQUIP CORPORATION
JACKSON, MICHIGAN, U. S. A.

MACHINE TOOL PROBLEM SOLVED

The problem of positioning hydraulic lines in the design of machine tools, and later problems of maintenance accessibility and replacement, are solved by the use of a new type of flexible Hose Line with Detachable Fittings on machine tool installations.

The simplicity of using these flexible lines in place of rigid lines not only eliminates many questions of design layout previously necessary to accommodate fixed lines, but also permits complete assembly of the machine itself, followed by the subsequent application of these flexible lines, accommodating themselves to any space available, over or around various parts.



The above view illustrates the rear of a special milling machine with three hydraulically driven milling heads. Aeroquip hose lines are handily adapted to all positions and connections where rigid tubing would have required more extensively engineered outlet and space arrangements. At the same time performance under extreme vibration has been greatly improved and failures or ruptures are practically eliminated.

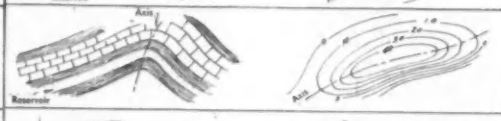
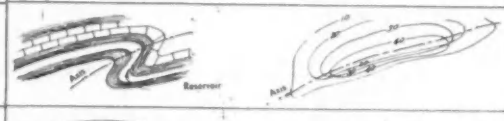
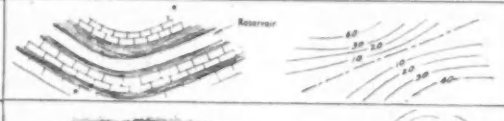
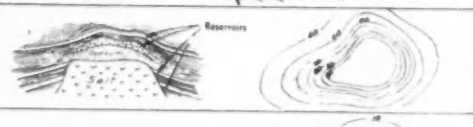
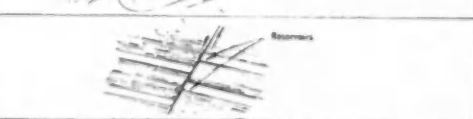
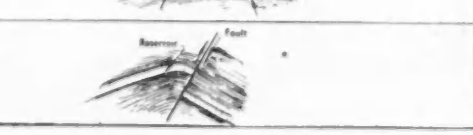
Aeroquip hose lines, which are "AN" standard on U. S. Army and Navy aircraft, are suitable for all hydraulic actuation, including installations for lubrication, pressure switches and power transmission.

The detachable fitting feature simplifies maintenance, permitting quick attachment, and continued re-use of the individually interchangeable fitting parts with new hose lines "tailored to the job" on the spot by simply cutting new Hose to the desired length.

The adoption of flexible Hose Lines to Machine Tool installations is gaining rapid recognition among machine tool designers and builders.

GENETIC AND MORPHOLOGIC CLASSIFICATION OF OIL and/or GAS RESERVOIRS

III. STRUCTURAL TRAPS

Genetic Processes			Cross Sections and Structural Maps	Diagnostic Features	Examples – References
I. Closure by Folding	a. Compressional deformation	1. Symmetrical anticline		1. Radial structural closure in 4 directions 2. Even spacing between contour lines	Santa Fe Springs Field, California (28)
		2. Asymmetrical anticline		1. Radial structural closure in 4 directions 2. Contour lines crowded on one side	Wheeler Ridge Field, California (39) Grass Creek Field, Wyoming (40)
		3. Overturned anticline		1. Radial structural closure in 4 directions 2. Overturned limb of fold can be easily misinterpreted as a fault 3. Contours intersect each other in the plane view	McKittrick District, California (36) Apache Oil Pool, Oklahoma (61)
		4. Quaquaversal dome		1. Radial structural closure in 4 directions 2. Structure is produced by rotation movement of sediments overlying buried fault (in bed rock or basement complex) and resulting from horizontal slippage along the fault surface	Bald Hill Field, Oklahoma (42)
		5. Syncline		1. Radial structural closure in 2 directions 2. Negative radial closure in 2 directions 3. Accumulation of oil in syncline appears possible only when bottom or edge water is absent	Midway Sunset Field, California (32) Cabin Creek Field, West Virginia (43) Tanner Creek Field, West Virginia (44)
	b. Deformation by differential compaction around submerged topographic features	1. Granite ridge (elongated or east) 2. Monadnock (round, symmetrical)		1. Radial structural closure in 4 directions 2. Buried granite ridge is often elongated 3. Compaction around a monadnock produces a round or symmetrical bulge 4. Porosity closure also possible by depositional pinch-out or metamorphic changes (Petrologic trap)	Granite Ridge Pools (Kansas, Oklahoma) Eldorado, Augusta (45) Cushing (46) Healdton (47) Thomas (48) Petrolia, Texas (50) Big Lake, Texas (51) Playa del Rey, Calif. (36) Tonkawa, Okla. (52)
	c. Deformation by rejuvenation of buried structure			1. Radial structural closure in 4 directions in beds overlying buried structure 2. Buried structure often faulted and rejuvenated uplift along this fault takes place 3. Possibility of petrologic trap below the erosional truncation	Tonkawa Field, Oklahoma (52) Thomas Field, Oklahoma (48) Eldorado Field, Kansas (49)
	d. Intrusional deformation	1. Salt Dome		1. Radial structural closure in 4 directions 2. Flank sand may be squeezed or bevelled by the salt mass	Salt Dome Oil Fields (53)
		2. Igneous intrusion (Igneous activity can be pre-deposit, contemporaneous or post depositional) — Stock or Boss, Neck or Plug, Laccolith		1. Radial structural closure in 4 directions 2. Possibility of depositional wedge edge around intrusion (Petrologic trap) 3. If igneous activity is post-depositional, possibility of closure of metamorphic porosity alteration, also development of porosity	Fabens Pool - zone of porous metamorphosed shales; Tampico-Timpan (54) El Segundo, California (Bull. 118, p. 295-6; 36)
		Dike or Sill		1. Radial structural closure in 2 directions, one of which is structural and the other made by the dike or sill or through metamorphic porosity alteration	
II. Closure by Change in Dip	a. Terrace and Monoclinal Nose			1. Radial structural closure in 3 directions 2. Usually found over drag-created closed structural feature	Delaware Terrace Pool, Orange County, Oklahoma (6)
	b. Saddle			1. Radial structural closure in 2 directions. 2. Negative structural closure in 2 directions.	Pershing Pool, Osage County, Oklahoma (56)
	c. Plunging anticline			1. Radial structural closure in 3 directions	Woodsfield Pool (Berea Grit) Ohio (57)
III. Closure by Faulting	a. Normal Fault			1. Radial structural closure in 2 directions, one of which is the fault surface 2. Fault produced by gravity isostatic adjustment) or horizontal tension	Mexia Pool, Texas (58)
	b. Reverse Fault			1. Radial structural closure in 2 directions, one of which is the fault surface 2. Fault found in areas subjected to horizontal compression	Balcones-Mexia-Luling System of Faults, Texas (58)
	c. Graben			1. Radial structural closure in 2 directions, one of which is the fault surface 2. Fault system found in areas subjected to isostatic adjustment or horizontal compression	Pechelbronn field mine, France (59) Balcones-Mexia-Luling System (58) Round Mountain Pyramid Hill Pools (Calif.) Bull. 118, p. 570-83 (36)
	d. Horst			1. Radial structural closure in 2 directions, one of which is the fault surface. 2. Fault system found in area subjected to horizontal compression	Munster Area, Germany (60) Peel Horst, Holland (61)
IV. Closure by Faulting and Folding				1. Radial structural closure in 2 or more directions with additional closure being produced by fault drag or warping 2. Type of closure found in areas subjected to horizontal compression	Seal Beach, California Bull. 118, p. 325-8 (36) Capitan, California Bull. 118, p. 374-6 (36)

Krynine with whom numerous pleasurable hours were spent discussing the problems of oil and gas reservoirs.

References

[1]W. B. Wilson—Proposed Classification of Oil and Gas Reservoirs—Problems fo Petroleum Geology—AAPG symposium—pp. 433-446 (1934). F. G. Clapp—Role of Geologic Structure in the Accumulation of Petroleum—Structure of Typical American Oil Fields—Vol. II, pp. 667-716 (1929). A. H. Dueloux—Classification of Stratigraphic Traps—Mines Magazine—Petroleum No., 1941. P. D. Krynine—Oil Fields in Time and Space (Abstract)—The Dallas Digest, pp. 63-65, 1944.

Chart References

(1) W. R. Dillard: Olympic Pool, Hughes and Okfuskee Counties, Oklahoma, Stratigraphic Type Oil Fields (STOF), pp. 456-472.

(2) C. R. Fettke: Music Mountain Oil pool, McKean County, Pennsylvania, STOF, pp. 492-506.

(3) J. F. Pepper, et al: Map of Second Berea Sand, Ohio, USGS, Oil and Gas Investigations, Preliminary Map No. 5, 1944.

(4) R. E. Sherrill, P. A. Dickey and L. S. Matteson: Types of Stratigraphic Oil Pools in Venango Sands of Northwestern Pennsylvania, STOF, pp. 507-538.

(5) R. E. Sherrill, et al: Oil and Gas Geology of the Oil City Quadrangle, Pennsylvania, Pennsylvania Topographic and Geological Survey (1943).

(6) N. W. Bass, et al: Origin and Distribution of Bartlesville and Burbank Shoestring Oil Sands in Parts of Oklahoma and Kansas, AAPG Bulletin, Vol. 21 (1937), pp. 30-66.

(7) M. W. Ball, et al: Shoestring Gas Fields of Michigan, STOF, pp. 237-266.

(8) R. Wright: Red Fork Shoestring Sand Pool, STOF, pp. 473-491.

(9) L. H. White: Subsurface Distribution and Correlation of the Pre-Chattanooga ("Wilcox" sand) Series of Northeastern Oklahoma, Oklahoma Geological Survey Bulletin 40, p. 22 (1926).

(10) F. M. Swain, personal communication.

(11) H. E. McNeil: Wherry Pool, Rice County, Kansas, STOF, pp. 118-138.

(12) H. H. Charles: Bush City Oil Field, Anderson County, Kansas, STOF, pp. 43-56.

(13) Pennsylvania Topographic and Geologic Survey: Preliminary Oil and Gas Map of Forest and Adjacent Counties, Pennsylvania (1942).

(14) J. E. Blixt: Cut Bank Oil and Gas Field, Glacier County, Montana, STOF, pp. 327-381.

(15) E. C. Edwards: Kern Front Oil Field, Kern County, California, STOF, pp. 9-18.

(16) E. C. Edwards: Edison Oil Field and Vicinity, Kern County, California, STOF, pp. 1-8.

(17) J. L. Garlough and G. L. Taylor: Hugoton Gas Field (Kansas, Texas and Oklahoma), STOF, pp. 78-104.

(18) W. B. Wilson: Geology of Glenn Pool of Oklahoma—Structure of Typical American Oil Fields, Vol. I, pp. 230-242 (1929).

(19) P. D. Krynine: Petrology and Genesis of the Third Bradford Sand, The Pennsylvania State College, M. I. Experiment Station Bulletin 29 (1940).

(20) J. K. Murphy, et al: Seymour Pool, Baylor County, Texas, STOF, pp. 760-775.

(21) E. R. Lloyd: Capitan Limestone and Associated Formations of New Mexico and Texas, AAPG Bulletin Vol. 13 (1929), pp. 645-658.

(22) P. D. Krynine, personal communication.

(23) P. D. Krynine, personal communication.

(24) S. B. White: Davenport Field, Lincoln County, Oklahoma, STOF, pp. 386-407.

(25) V. Cotner and H. E. Crum: Geology and Occurrence of Natural Gas in Amarillo District, Texas, AAPG Bulletin, Vol. 17, No. 8, pp. 877-906 (1933).

(26) Collingwood and Rettger: The Lytton Springs Oil Field, Caldwell County, Texas, AAPG Bulletin, Vol. 10, No. 10, pp. 953-975 (1926).

(27) D. A. McGee and W. W. Clawson, Jr.: Geology and Development of Oklahoma City Field, Oklahoma County, Oklahoma, AAPG Bulletin, Vol. XVI, No. 10, pp. 957-1020 (1932).

(28) D. A. McGee: The West Edmond Oil Field, Petroleum Engineer, October, 1944, pp. 227-250.

(29) H. E. Minor and M. A. Hanna: East Texas Oil Field, Texas, STOF, pp. 600-640.

(30) W. A. Ver Weibe: Unconformity at Top of Trenton in Lima, Indiana, AAPG Bulletin, Vol. 13, No. 6, p. 688 (1929).

(31) G. C. Gester and H. J. Hawley: Geology of the Yates Pool—Structure of Typical American Oil Fields, Vol. II, pp. 480-99 (1929).

(32) R. W. Pack: The Sunset-Midway Oil Field, California, USGS Professional Paper 116 (1920).

(33) Geology of Salt Dome Oil Fields, AAPG (1926).

(34) R. D. Reed and J. S. Hollister: Structural Evolution of Southern California, Vol. 20, No. 12, p. 1603 (1936).

(35) D. P. Carlton: West Columbia Salt Dome and Oil Field, Brazoria County, Texas—Structure of Typical American Oil Fields, Vol. II, pp. 451-469 (1929).

(36) J. B. Stevens: McKittrick Area of the McKittrick Oil Field, Kern County, California—Economic Development of the Oil and Gas Fields of California, Part III, Bulletin 118, pp. 510-511, Division of Mines, Department of Natural Resources State of California, March, 1943.

(37) R. K. DeFord: Surface Structure, Florence Oil Field, Fremont County, Colorado, AAPG Symposium, Vol. II, pp. 75-92.

(38) R. R. Templeton and C. R. McCollom: Santa Fe Springs Field, Bulletin AAPG, Vol. 8, pp. 178-194 (1924).

(39) C. L. Kaiser: Wheeler Ridge Field, California Oil Fields, Vol. 9, No. 12, pp. 25-29 (1924).

(40) E. L. Estabrook: Production Problems in the Grass Creek Oil Field, Mining and Metallurgy, No. 182, pp. 65-66 (1922).

(41) V. C. Scott: Apache Oil Pool, Caddo Co., Oklahoma, AAPG Bulletin, Vol. 29, No. 1, pp. 100-105 (1945).

(42) C. S. Ross: Bald Hill Dome, Eastern Osage County, Oklahoma, USGS, Bulletin 686-N (1922).

(43) T. and I. B. Wasson: Cabin Creek Field, West Virginia—Structure of Typical American Oil Fields, Vol. I, pp. 462-475 (1929).

(44) R. E. Davis and E. A. Stephenson: Synclinal Oil Fields in Southern West Virginia—Structure of Typical American Oil Fields, Vol II, pp. 571-576 (1929).

(45) A. E. Fath: Geology of the Eldorado Oil and Gas Field Butler County, Kansas, State Geological Survey of Kansas, Bulletin No. 7 (1921).

(46) F. Buttram: The Cushing Oil and Gas Field, Oklahoma, Oklahoma Geological Survey, Bulletin No. 18, pp. 1-60 (1914).

(47) S. Powers: The Healdton Oil Field, Oklahoma, Economic Geology, Vol. 12, pp. 594-606 (1917).

(48) S. K. Clark: Thomas Oil Field, Kay County, Oklahoma, Bulletin AAPG, Vol. 10, pp. 643-655 (1926).

(49) J. R. Reeves: El Dorado Oil Field, Butler County, Kansas—Structure of Typical American Oil Fields, Vol. II, pp. 160-167 (1929).

(50) F. E. Kendrick and H. C. McLaughlin: Relation of Petroleum Accumulation to Structure, Petroleum Field, Clay County, Texas—Structure of Typical American Oil Fields, Vol. II, pp. 542-555 (1929).

(51) E. H. Sellars and L. T. Patton: The Subsurface Geology of the Big Lake Oil Field, AAPG Bulletin, Vol. 10, pp. 365-381 (1926).

(52) G. C. Clark and F. L. Aurin: The Tonkawa Field, Oklahoma, AAPG Bulletin, Vol. 8, pp. 269-283 (1924).

(53) Gulf Coast Oil Fields, AAPG Symposium (1936).

(54) E. DeGolyer: AIME Transactions, Vol. LII, p. 269 (1915).

(55) C. S. Ross: Structure of the Delaware Anticlinal Terrace, USGS Bulletin 686 (1922).

(56) W. W. Rubey, USGS Bulletin 751-B (1923).

(57) D. D. Condit: Structure of the Berea Oil Sand in the Woodsfield Quadrangle, Belmont, Monroe, Noble and Guernsey Counties, Ohio, USGS Bulletin No. 621, pp. 233-249 (1916).

(58) F. H. Lahee: Oil and Gas Fields of the Mexia and Tehuancana Fault Zones, Texas—Structure of Typical American Oil Fields, Vol. I, pp. 304-388 (1929).

(59) P. de Chambrier: Les Mines de petrole de Pechelbronn, Soc. Industrialle, Strasbourg (1920).

(60) W. A. J. M. Van Waterschoot van der Gracht: Eindverslag over de Onderzoekingen en Uitkomsten van den Dienst der Rijkopsporing van Delfstoffen in Nederland (1903-1916), The Hague, Netherlands (1918), 664 pp.

(61) X. Stainier: Sur les recherches du Sel en Campine, Ann. des Mines de Belgique, pp. 117-69 (1911).

Middle East Oil Reserves Described to Tulsa Nomads

The oil reserves of the Middle East are great enough to dominate the oil world markets, according to John H. Murrell, petroleum geologist and engineer of DeGolyer and MacNaughton, consulting geologists and engineers of Dallas. Murrell expressed this opinion at a meeting of the Tulsa Chapter of Nomads.

According to Murrell, the Middle East oil fields cover vast areas with very thick producing zones. Oil compares with crudes from western Texas, western Oklahoma and western Kansas and can be produced and put aboard tanker at a cost of from 40 to 50 cents a barrel, including royalties and taxes, and can be shipped across the Atlantic for from 60 to 70 cents a barrel, or a total cost of from $1 to $1.25 a barrel.

Because of its good grade, Middle East crude offers competition to United States and Venezuela oil and Murrell pointed out that this competition must not be overlooked in the future planning of oil markets.

Murrell showed motion pictures taken on recent trips to the Middle East and emphasized the importance of discoveries already made in Iraq, Iran, Bahrein Island, Ku-Wait, Arabia, Egypt and other lands.

Argentine Government Owns Two-Thirds of Production

Official figures released by the government of Argentina reveal that total crude production in that country in 1944 amounted to 24,229,634 barrels, as compared with 24,835,511 barrels in the previous year — a decrease of 605,877 barrels.

Two thirds of the 1944 output (16,205,361 barrels) was taken from state oil fields operated by Y. P. F. and the balance of 8,024,273 barrels from wells operated by private companies.

Explaining the drop in production, Y. P. F. cites the shortage of drilling and production equipment, which has "rendered the opening of new fields extremely difficult."

Texas Coast Field Named

The name Boyce has been given the field discovered by Magnolia Petroleum Company's Boyce 1 in Goliad County, Lower Texas Coast, Don O. Chapell, chairman of the Oil Field Nomenclature Committee of the South Texas Geological Society, has announced. Transwestern Oil Company's William Altman 1 is classed as the second well in the Boyce field.

Indian Lands Offered

Sealed bids for oil and gas leases on 101 tracts totaling 8770.86 acres of restricted lands of the Five Civilized Tribes will be received by the superintendent up to 10 a.m., July 10, at the agency office in Muskogee, Oklahoma. Counties in which leases are offered include Washington, Creek, Okfuskee, Hughes, Seminole, Haskell, Pontotoc, Garvin, McClain, Grady, Stephens.

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In new fields, controlled pressure decline, optimum producing rates and cycling will, where applicable, lead to maximum recovery. However, many active water drive producing fields are now in the stripper stage and are not susceptible to secondary recovery methods by gas or water injection. Study of some of these reservoirs reveals that reducing the bottom hole pressure, or hydrostatic head against the formation, by producing large volumes of fluid will result in additional oil in commercial quantities. Large volume pumping will lower the producing fluid level sufficiently to permit gas expansion to move oil out of trapped places into the more permeable channels connecting with the well bore. It is generally noted that the type reservoir susceptible to this production method is a water drive horizon producing large amounts of water, small amounts of oil, and reasonable volumes of gas.

In the Seminole area of Oklahoma, many producing wells completed in the Wilcox sand are presently producing large volumes of water with sufficient oil to make them economical producers, while other wells produce such a small amount of oil that they are either marginal or uneconomical. Detailed study of these marginal or uneconomical wells sometimes reveals the fact that large amounts of oil can still be recovered by changes in production methods.

At one location in particular, an uneconomical Wilcox sand has been placed on a profitable basis by means of a submersible electric pump installation. After a close study of this well it was concluded, on the basis of past production history, reservoir and structural characteristics, that economic production could be restored if the bottom hole pressure were reduced sufficiently to permit formation gas to move the oil to the well.

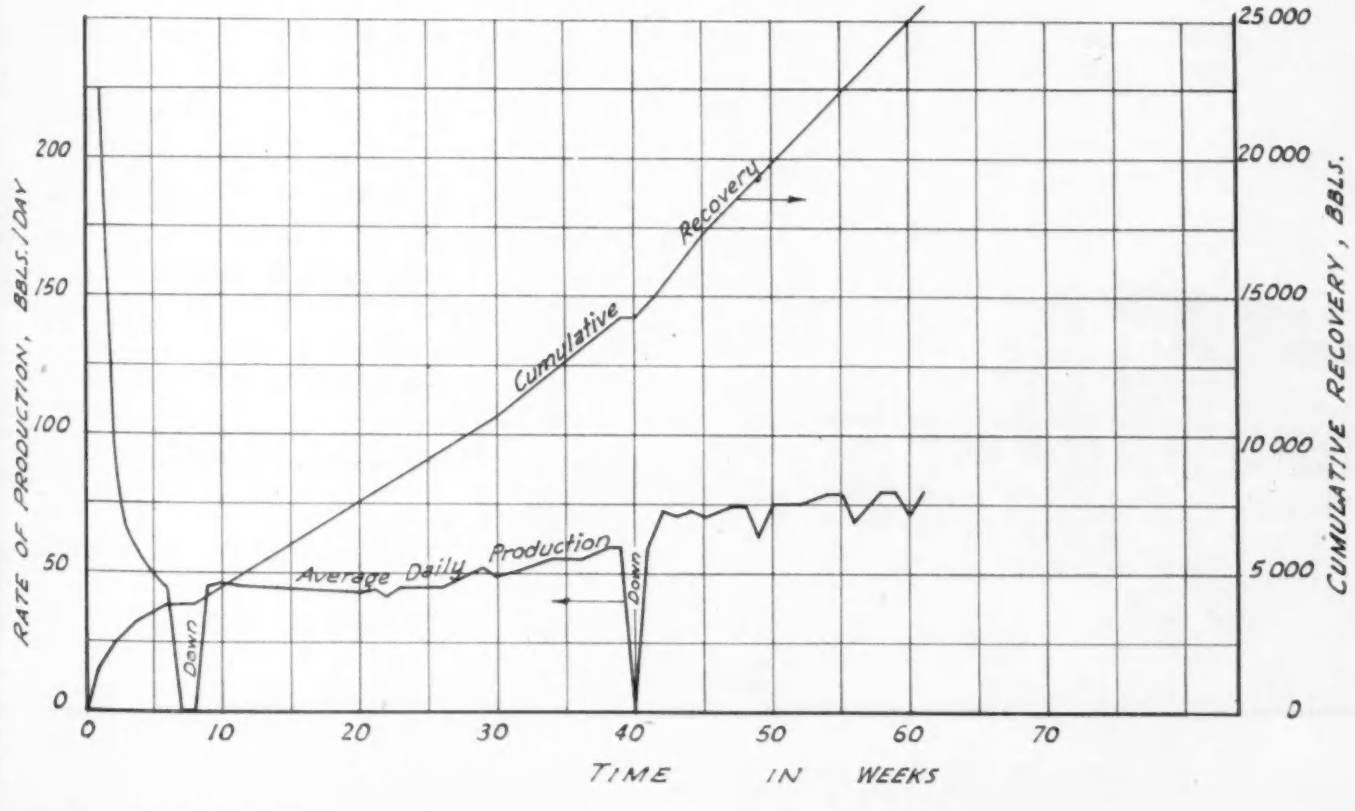
Production Hiked

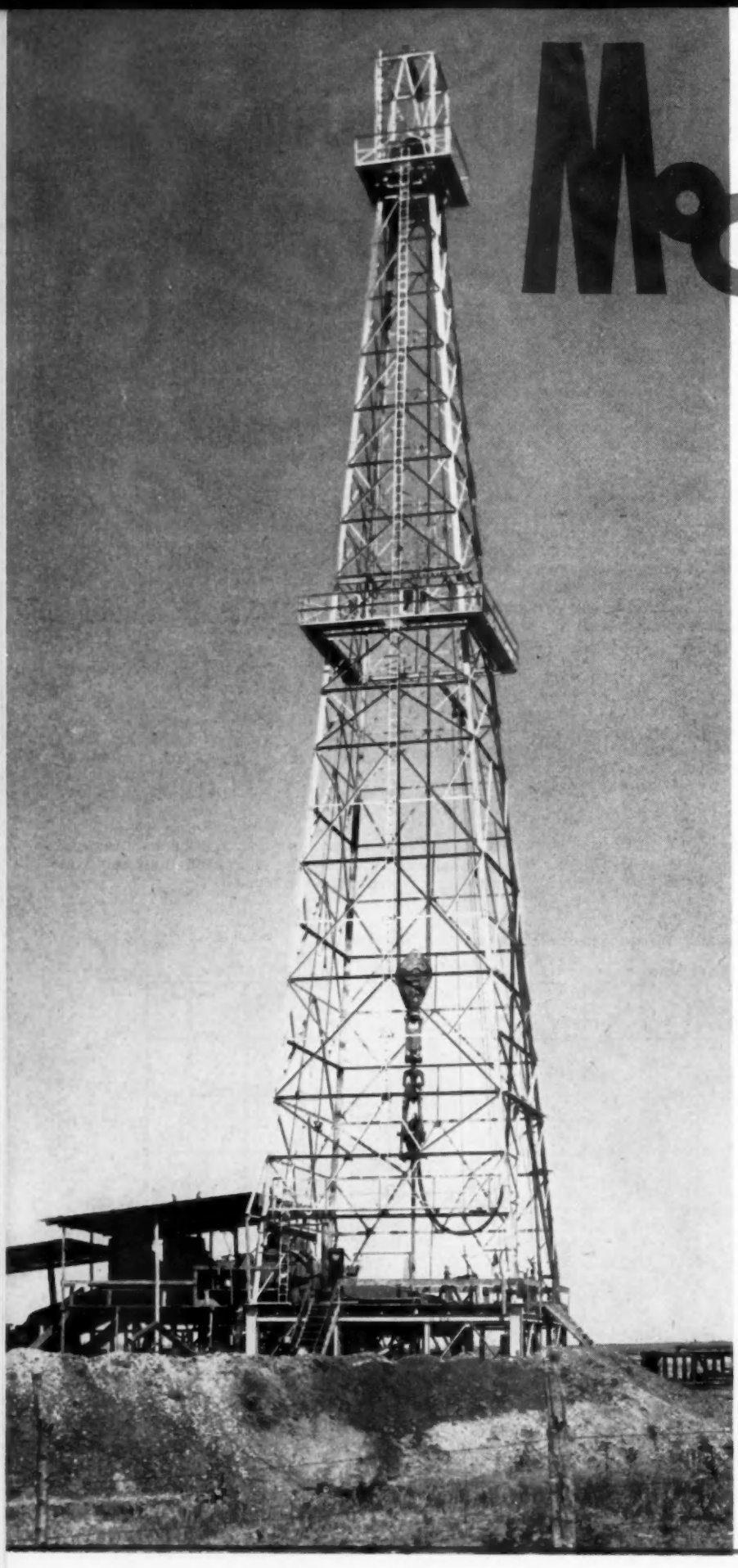
After installation of the electrical pump, (see Figure 1) the daily average production for the first week was 225 barrels of oil per day. The water production was about 2000 barrels per day, which gives a water-oil ratio of 9-1. Previously the well had produced about 15 barrels of oil daily with 400 barrels of water, a water-oil ratio of 27-1.

It is also indicated in Figure 1 that the daily average production rapidly declined to about 45 barrels per day for a period of approximately 20 weeks, after which the daily production gradually increased to about 77 barrels of oil per day after the first year's operation. During this time the cumulative recovery was 20,000 barrels of oil, which never would have been recovered by conventional low-volume pumping.

When production stabilized at 45 barrels per day the water-oil ratio was 47-1 and when production had increased to 77 barrels per day the water-oil ratio returned to the original value of 27-1. However, the well was an economical operation under high volume producing methods. After 61 weeks of operation, a recovery of 25,000 barrels of oil had been realized. Wells within ¼ mile of this operation have not been adversely affected by the increased fluid removal from the subject well.

Figure 1. Production Data, Wilcox Sand Well, Seminole Area, Oklahoma





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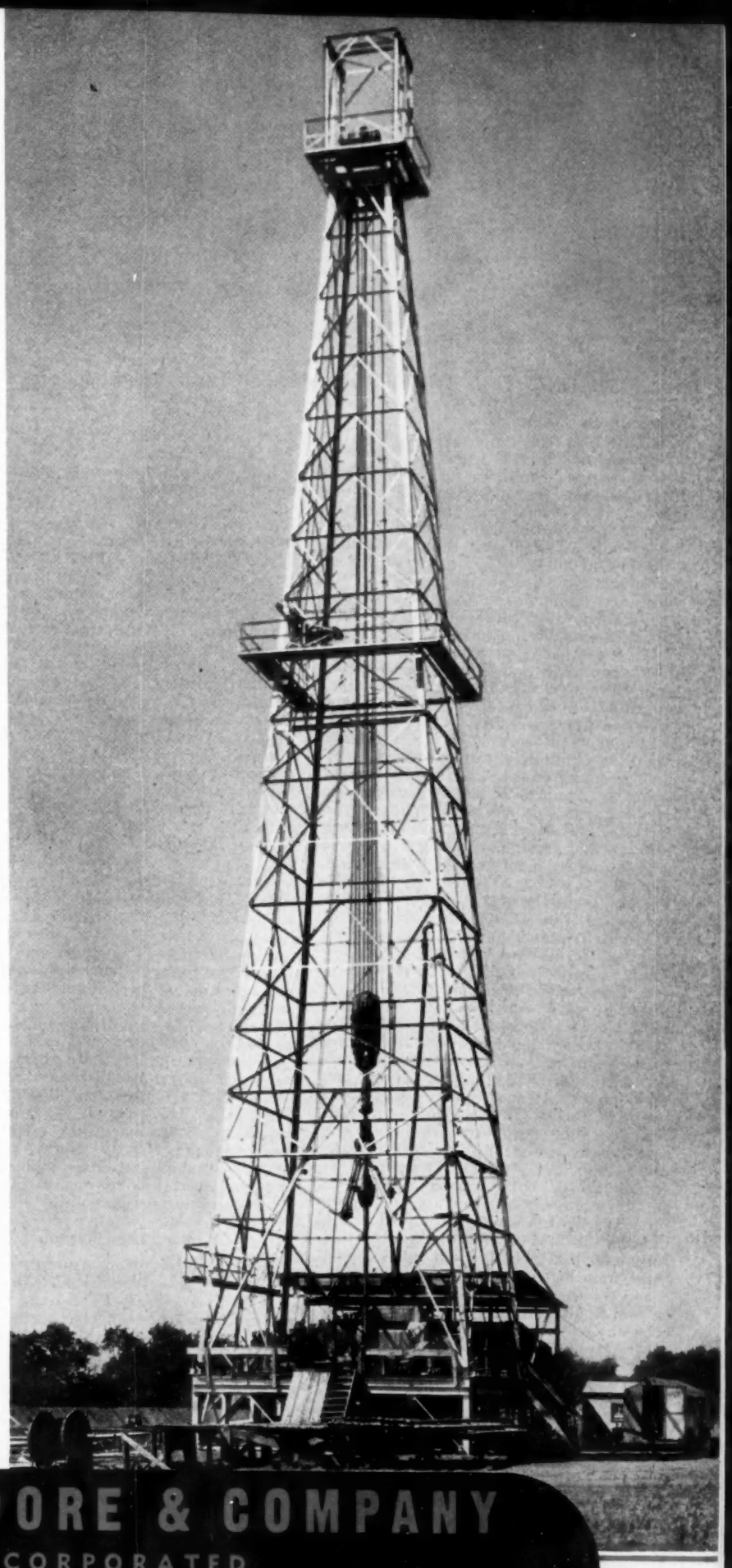

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Oil Wins In Europe

Movement of POL in support of armies is termed real epic of American oil industry

By COLONEL E. O. THOMPSON, Member Texas Railroad Commission

HERE is the story of American oil and oil men in this war.

The greatest military operation in history is over. An operation is a big one when all the available resources of the world are required to support it. We used oil, aviation and motor gasoline, diesel and lubes to win this war. These products constituted one third of the tonnage handled for the invasion and subsequent liberation of Europe—and that's a sizeable business.

Here's an idea of what was involved to effect a workable program for the supply of POL (POL is a British term meaning petrol, oil and lubricants, adopted by the United States forces as well, in an effort to facilitate reference to these commonly used products).

1. Stockpiling of oil in the United Kingdom from U. S. and British sources in the Eastern and Western Hemispheres. To accomplish this, all available bulk storage in England was placed in a pool under the control of the Petroleum Board. All stocks were held by the British and issued to the U. S. on reverse lend-lease. The available tanker fleet of Great Britain and the U. S. was required to effect desired stock levels preparatory to invasion.

2. Preparation of a plan of POL supply. The plan was begun in February, 1944, by a handful of oil men—a drilling superintendent of Humble Oil & Refining Company, a transportation specialist of Standard Oil Company (New Jersey), an experienced independent pipeliner, a Skelly Oil Company engineer. Such was the humble beginning of the plan which would spell success or failure in this great effort. These men in conjunction with the various services of supply worked night and day, at times for days with only a catnap. In two months the first portion of the plan was complete, that which involved the first three months after D-day.

3. Procurement, stockpiling, phasing in, and finally utilization with maximum economy, of the POL materials of war: cargo trucks, tank trucks, tank cars, pipe, valves and fittings, tankage.

4. Procurement and systematic deployment of experienced oil men to do the job—men welded together for maximum utilization of their respective qualifications.

Principle of Bulk

Our plan embodied the principle of *bulk*. We sold the services on the idea of bulk transportation, in lieu of the staid Army method of transporting in cans, to the greatest extent possible. The idea was to save dry cargo space on ocean and overland transport facilities, to ship bulk as far forward as possible and to fill cans up there.

To accomplish our bulk principle we needed first ports to bring our tankers in, storage at the ports, a pipeline system from the port storage to forward and intermediate storage points, a tank car and truck fleet—all of which had to be organized quickly for immediate support of our armies beginning on D-day.

Our fighting men were to try to take Cherbourg in 8 days. In the meantime, we were, in conjunction with the British, to bring small boats to improvised docks (called "Mulberries") at the invasion beaches, erect storage nearby, and by use of "tombolas" or ship to shore lines, discharge small bulk cargoes ashore. These beach installations were to be implemented with 4-inch pipelines to deliver aviation gasoline to Carentan and motor transport 80 gasoline to Balleroy and Etreham. Our forces were to be further supported by imports of packed POL which had been preloaded in the United Kingdom awaiting invasion.

It took our forces until D-day plus 15 to take Cherbourg, but the seven day delay proved fruitful. We captured half a million barrels of tankage there most of which was intact. Our engineers began rehabilitation of berthing facilities, constructed lines to the storage and did in 14 days a most remarkable cleaning job of the four 110,000-barrel tanks. When gasoline was pumped into them, it was not even noticeably discolored, and we received our first tanker in the harbor of Cherbourg July 11. A storm which wiped out our unloading facilities at Port-en-Bessin shortly after D-day took its toll in ships, facilities and supplies and may have contributed to the delay in capturing Cherbourg.

Yanks Take Cherbourg

With Cherbourg in American hands, the POL plan asserted itself. An import of 4300 tons of bulk POL daily was set up, all discharged at one berth. These limited facilities were the sole bulk support until other ports of Le Harve, Ostend and Antwerp came into Allied hands. Three 6-inch lines were constructed on the heels of the Army through LaHaye de Puits, St. Lo, Vire, Mortain, Alencon, Domfront, Chartres, and on to the Seine near Paris. These 6-inch lines constituted our major pipe line system with a capacity of 3000 tons per day of motor transport 80 and 1500 tons per day of aviation gas. Storage for both products was erected at strategic points along the line to serve air and ground tactical units in those areas. With each successive leg of the pipe line completed, it became possible to reduce our demands on the railroads to carry packaged POL. Gradually beach stocks were drawn down and cans, after an initial shipment forward, were returned to can filling points along the line farther and farther forward as the line progressed.

It should be borne in mind that ultimate delivery of every gallon of gasoline into the tank of a military vehicle is by means of a 5-gallon can. All these millions of gallons of gasoline must be canned and moved forward by cargo truck and final distribution made in the most forward points.

Storage and pipelines of our minor system from Port-en-Bessin remained part of our bulk import program until September, when we agreed to turn over all these facilities to the British with the proviso that 50,000 barrels of bulk be held in storage for U. S. account and delivered as required. As autumn approached this operation proved of little use, for the bad weather in this little channel port, precluded a regular schedule of imports. Cherbourg continued to serve us faithfully with the exception of a period of a few days in November when a severe storm tore out all discharge lines and threatened the source of our pipe line supply. We had fought a losing battle with the Navy and Transportation officials in our attempts to have a second berth installed, for it was determined that sufficient draft did not exist at the point desired. Therefore, the hazards of such operation had to continue until new ports were set up.

Support for Armies

From July 11, 1944, the first bulk tanker delivery at Cherbourg, until October, 1944, when Ostend gave us an additional import point, 2,209,000 barrels of motor transport 80 and 600,000 barrels of aviation gas were discharged over one pier. This constituted the entire bulk support of our armies and the source of our pipe line throughout.

The great breakthrough of July and August included the liberation of Paris. Thirty hours after the final strike by the Free French and the Second French Armored Division, we had POL officers in Paris itself. A quick reconnaissance revealed over 500 tank cars in the yards and ready for service, 120 barges on the Seine River, considerable undamaged storage in oil plants, and a small quantity of German synthetic fuels. The distress and confusion we found, however, was incalculable.

Our POL men were immediately beset with pleadings from the gas and electric industries, for the coal shortage could be made good with diesel oil which we had in Cherbourg. In 24 hours our cars were on the way and in ten days' time were rolling into Paris with oil to provide electricity, gas, hot water and transportation for its stunned people. Agreements were speedily reached with the French for the use of tank cars, a few tank trucks, and bulk storage plants with an eye to the future, for we foresaw Le Havre as a new port, the Seine River as a medium of barge transportation and the Paris area as the center of distribution to the ground and air forces as our armies pushed forward.

A site was selected for the Paris terminus of our pipe line where a large decanting and railroad loading point was made ready. From this point 1½ million gallons of motor and aviation gasoline

were outloaded daily, still augmented, of course, by rail shipments from Cherbourg.

The British meanwhile, were at work to the north and in October captured the port of Ostend. Bulk was immediately scheduled into that port, tank cars were switched in, and shipments averaging 8000 barrels per day commenced relieving somewhat the burden on rail shipments from Cherbourg. Intake at Ostend was somewhat irregular due to weather and limitations of draft made possible only tankers of 3000 ton capacity. A total of 475,000 barrels of gasoline was imported at Ostend before we dispensed with it December 21, 1944.

The Seine River from Rouen to Paris was a sorry mess with bridges blown and huge structures obstructing the channel. With the capture of Le Havre the Navy commenced its clean-up job. An agreement was reached with the British as to joint use of 525,000 barrels of storage found intact at Rouen. This storage was initially fed by small tanker from England, by a British pipe line from Cherbourg, and later when Le Havre was sufficiently rehabilitated to receive tankers, by transshipment from that port and from Port Jerome. A 10-inch line from Le Havre to the Port Jerome refinery of Esso fed the latter storage and a tanker shuttle system was set up between the refinery and our storage at Rouen. This became an important source of fuels for Seine River delivery to Paris.

To the north again the British were fighting it out for Antwerp, greatest port in Europe. Under German shell-fire, our construction teams built lines from the port, and as each morsel of land fell east of Antwerp, laid and coupled line toward our final goal, the Rhine River. Nearly 2 million barrels of storage were captured at Antwerp, again set up for joint British-American use. We provisioned and stocked 950,000 barrels on a proportionate import basis and our four 4-inch and one 6-inch lines from Antwerp to Maastrich, Holland, were finished and dispensing 85 miles from the port in 30 days. This construction of 425 miles of pipeline was materially aided by our having three liberty ships loaded with construction materials waiting to be shipped on signal that the port was open. Average imports at Antwerp were 53,000 barrels of POL, and we finally realized immeasurable relief for our major system out of Cherbourg, and switched the greater part of our rail activity to that port.

Requirements Mounting

Requirements were mounting daily however. The air force was throwing in all they had. The U. S. Ninth Army came into the 12th Army Group, and all of them were moving and burning unprecedented amounts of gasoline. By December 15 we were shipping 100,000 barrels of gasoline daily and had upwards of 3000 tank cars under load and en route to be loaded at all times. Twenty-five truck companies of 48 trucks each, plus organization air force equipment were hauling gasoline over the roads of France, Belgium and Holland.

Then came the December 16 "bulge." Rail shipments had to cease, for cars were piling up in forward areas. Stocks in forward depots were at a peak and a bit too concentrated. Steps were taken to evacuate our packages to rear depots. Orders preparatory to demolition of our POL dumps were hastily prepared. All in all our POL position was rather precarious. Had we not moved fast, we stood a chance of losing 50,000 tons of packed POL, and worse than the POL itself, the threatened loss of cans could have proved disastrous. Small amounts of packed stock in Army areas were strafed by the enemy and destroyed, small quantities were demolished by U. S. units themselves, but such loss proved negligible and for the most part, stocks were successfully evacuated. The major threat was over by January 5 and our supply system commenced to return to normal. The lull in activity until the beginning of February gas us an opportunity to rebuild our stocks, this time with better dispersal and well balanced with lubes, greases and diesel oil.

In February, 1945, we received the green light to extend our pipeline systems and extensions were authorized from Maastricht, Paris and Saarebourg to the Rhine River. Invasion of Southern France necessitated a 6-inch and a 4-inch line north from the port of Marseilles for the support of the U. S. Seventh and French First Armies.

Rhine Crossings

We had accumulated the materials for three Rhine River crossings in engineer depots forward and construction personnel were put on the job. April 30 was the target date on construction of 1100 miles of pipe line, pumping stations, related tankage, some of which construction was over very rough terrain. The Northern System went on stream one month ahead of schedule with crossings in and pumping to the east shore of the Rhine. A crossing had been made on the heels of the First Army at the Remagen bridgehead; one installed at Mainz for Third Army and one was Mannheim for Seventh Army. Bulk in tank cars was transported to the west shore storage and pump across the Rhine at the latter three points while the lines of the major and Southern Systems had not yet reached the destinations.

Mention was made that three pipe line crossings of the Rhine were planned and that materials for these crossings were stockpiled and earmarked in forward depots. The sudden crossing of the First Army at Remagen brought forth a call for bulk POL to follow him to his bridgehead on the East bank. The good fortune of the Army in capturing the Remagen bridge and its ability to use it for about ten days before its collapse, enabled several pontoon bridges to be constructed at the same point and one footbridge was offered by the Army engineers for the laying of a pipe line. We had not counted on this crossing; so materials were hurriedly assembled and installed .

The three planned crossings were in the vicinity of Wesel, on the eastern terminus of the Antwerp pipe line, in the vicinity of Mainz at the terminus of Cherbourg line and in the vicinity of Worms/Manneheim, the northern terminus of our southern pipe line system from Marseilles.

Submarine lines were not necessary as at any of the three points, bridges provided by the Army engineers being used instead. The construction of these crossings followed closely the crossing of the river by the Armies themselves.

Until the lines were laid across the river, support of the forces was accomplished by the transport of packaged POL by means of amphibious craft, assault boats and by cargo truck across pontoon bridges. Adjustments were rapidly made in tank car shipping schedules so that storage at the western end of each crossing could be filled and pumped across the river by pipeline to storage on the east shore, thereby saving much truck lift. With the construction of rail bridges at Wesel and Mainz, direct tank car shipments of aviation products were sent into Germany without such unloading and reshipment. The bridge at Mainz was 1350 feet long, was constructed in nine days and was the longest tactical bridge ever built.

With the completion of our pipe lines to these Rhine crossings, planned pipe line construction was finished. A total of 3446 miles of pipe line has been constructed, transporting 80,000 barrels of gasoline daily from port areas to the east of the Rhine. The materials used in all of our lines weighed 137,000 tons and paid for itself in tonnage every 14 days, for 9500 tons of POL were moved daily without the turn of one wheel of a rail car or truck.

Our finished distribution system was capable of carrying 150,000 barrels of gasoline per day to our forces during peak consumption periods of April, 1945, when some days more than 1¼ million gallons of gas were burned per day by our armies. To fill this fabulous requirement, we had pressed 4000 tank cars into service; 1056 tank trucks of 2000 and 750-gallon capacity; 144 cargo trucks, each with four 750-gallon skid tanks mounted on trailers; had imported some 25 million of 5-gallon returnable cans; used 120 barges; maintained and operated 4½ million barrels of bulk storage for all bulk products handled; discharged a fleet of 86 tankers in constant service from the United States and United Kingdom, exclusive of supply from the Middle East; operated pipe repair and can repair depots; 6 mobile petroleum testing laboratories and 6 static; and kept 10,000 men busily engaged in construction, storage operation and distribution.

Airlift for Patton

Early in April, we instituted an air lift by C-47 aircraft to Patton when 3660 planes were loaded with 2,766,000 gallons of motor gasoline in cans over one 5-day period, designed to render support of his tank spearheads far beyond the reach of our normal line of supply. This average was maintained for some time. The railroads moved 517,000 tons of bulk and packaged POL in March, 1945, which constituted 30 percent of all tonnage handled by railroads in Allied territory.

We who were charged with the overall responsibility of coordinating and putting into action this vast system of importation and distribution, pay homage to the American oil industry and to American oil men who gave their unstinted effort and support to the winning of this war. We pay tribute to the men who gave more than that—those who gave their lives laying pipe line under fire, driving trucks through machine gun fire, operating our plants in Antwerp through the torment of V-1 and V-2 attacks every minute of the day and to those who manned anti-aircraft guns in the face of air attack to protect precious oil from destruction.

Russia Favors Turbine Drilling

More Power, Less Expense Claimed

IT IS safe to say that Russia has made the utmost use of technology as applied to oil finding and development during this war. Vast new reserves of crude discovered and brought into production during the past few years, in the midst of her greatest struggle for existence, speak well for Russia's ability to apply and make the most of technical research.

Spectacular success has been attributed to the turbine method of drilling as used in the Soviet Union. An account of this system of operation is given by J. G. Tolpin, of Universal Oil Products Company, Chicago, in the December, 1944, issue of the "Economic Bulletin on the Soviet Union." This bulletin is published monthly by the Russian Economic Institute, 90 Morningside Drive, New York 27, as an aid to better understanding between the Soviet Union and this country. Tolpin's discussion of the turbine method follows:

Tolpin's Discussion

"Recent reports of the progress of the Soviet oil-producing industry credited the turbine method of drilling oil wells with spectacular success. Interest in this method was accordingly manifested by persons close to the oil industry in the United States.

"The turbodrill (turbobur in Russian) was invented by M. A. Kapelyushnikov in 1923 and tests were started in 1924. In 1927 an office was created for developing this method in the Azerbaidshan (including Baku) fields. The turbodrill underwent constant modifications in this development. In the course of time other groups of engineers entered the field of research on turbine drilling and foreign consultants were engaged to work on certain problems involved. Some of the accumulated research data dealing with the theory, the construction, and the economics of the instrument as compared with other instruments, notably the rotary drill, were published in the Russian technical literature. Kapelyushnikov was of the opinion that the advantages of his method were amply demonstrated by the tests in the United States.

Varied Use of Turbodrill

"The turbodrill had a history of varied use in actual production. After 1932 the amount of drilling done with this instrument in the Azerbaidshan fields began to drop. However, the machine continued to be used for some time in the Grozny fields with increasing success. About 1934 commercial turbine drilling was halted for a time upon an order of the Soviet government, because of construction difficulties. Later, drilling was resumed with increasing success, and in the third five-year industrailization plan (1938-1942) turbine drilling was featured, which means that it had the full support of the government. M. A. Kapelyushnikov is now a corresponding member of the Academy of Sciences, U.S.S.R.

"Two developments in connection with turbine drilling are especially interesting: (1) About 1933 research on electrically driven drills was begun in Russia under the direction of M. M. Skvortsov; some of the results may have either advanced or retarded the development of the turbodrill. The fact is that in 1939 the first 1500 meter well was drilled in Baku by means of this electrical apparatus, and the method was pronounced a success. (2) Research on surface phenomena carried out at the Institute of Colloidal Chemistry and Electrochemistry under the direction of P. A. Rebinder led to development of a method of modifying the strength of geologic formations in contact with the cutting instrument. Acceleration of the rate of drilling by 20-60 percent was claimed as a result of the application of this method. It is impossible to say, without having made a thorough study, whether or not the success of the turbodrill is due in part to these two developments. At any rate, Professor Rebinder was given a Stalin prize in 1942 for his research, and in the citation, increase of the speed of drilling for oil was mentioned.

Power At Bottom of Hole

"The most important feature of the turbodrill is that the motive power used in rotary drilling is transferred from the surface to the bottom of the hole. Through a stationary pipe, mud fluid is pumped to the turbine or multiple turbines located at the bottom of the well, which rotate, with the aid of a set of gears, a shaft to which the bit is attached. Engineering research in this field concentrated on investigation of the type of turbine adaptable to the turbodrill, especially in view of the necessary restriction of size of the motor and the mechanical nonuniformity of the mud usually employed. The design of the gears and bit, materials for the construction of the apparatus, and its lubrication were also studied. Various types of bits were investigated. A percussion-rotary type bit was patented and mathematical analyses of the performance of the apparatus were published. In 1934 designs were published of multistage turbines containing as many as twenty-five sections, having a diameter of up to 11¾ inches, at a rate of flow of up to 25 liters per second, and a power output of up to 90 horsepower. Some 8¼-inch turbines of this type were subjected to eight months tests.

"High speed drilling, particularly that possible with the turdodrill, requires bits of special hardness; accordingly, a program of research was begun about 1927, which yielded several combinations of ceramic materials with alloys that are successfully used in the manufacture of drill bits.

"The turbodrill has many advantages in comparison with rotary drilling. The useless work of rotating the drill pipe in the latter is eliminated. According to Soviet tests made in 1936 the power required for rotation of the nonworking drill pipe in rotary drilling increases much more rapidly than the number of revolutions of the rotor per minute. A report made in 1940 stated that in drilling a 6-inch hole at a depth of 1100 meters the entire output of the motor of the rotary table, 145 kilowatts, was consumed in rotating the nonworking drill pipe. Use of the turbodrill or electrodrill effected a complete saving of this power, and the pressure transmitted to the drill reached 15 tons. The curved wells that often result from rotary drilling require drill pipe of high quality alloy steels. Many accidents in drilling and the loss of partly drilled wells have been traced to failure of drill pipe. Very little deviation from the normal course of the well takes place in turbine drilling, and pipe can be made of lower quality steel and of lower mechanical strength; in one case worn pipe from a rotary drill was used successfully. No failure of drill pipe has been reported in turbine drilling.

"A higher rate of drilling per uit time was attained. Also the cost of drilling was cut substantially after employment of the turbodrill was increased. The pressure exerted on the drill can be indicated much better than in rotary drilling. Then, too, the turbodrill is not nearly so noisy as the rotary drill.

"There has been keen economic competition between turbine and rotary methods of drilling. But at the present time, economics definitely seem to favor turbine drilling. It has been widely used in deep well drilling. Apparently it has played an important part in the development of the Ural oil fields."

Tarakan Oil Production Not Restored by Japs

Australian army intelligence officials report that in spite of their three years' occupation of Tarakan the Japanese were able to restore oil production there to no more than one-third of prewar output. About 200 new wells were put down by the Japs, but Allied bombings, deliberate slow-down labor tactics practiced by native workers, and native sabotage resulted in failure to produce substantial supplies.

Subsidies Authorized

Oil subsidy paymens of 35 cents a barrel have been authorized by OPA to producers in the Sasakwa (Calvin sand) pool of Seminole County, Oklahoma. The new ceilings will be from $1.20 to $1.60 per barrel, depending on the gravity of the oil. The pool qualified because daily production per well was less than five barrels during December, 1943.

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Production Picture Unchanged

Demand on U. S. Fields to Remain High

With the war now reduced to a single regional front many persons in and out of the petroleum industry are asking questions or expressing opinions regarding the possibility of immediate change in the oil supply picture as it affects the several major producing areas of the world. Uppermost in the minds of most Americans interested in the situation is the magnitude of the demand that will have to be met by our domestic industry, and to what extent the top-heavy drain on our domestic reserves can be progressively relieved by increased production in foreign countries.

This article represents a consensus of the opinions of those best qualified to analyze the many factors involved and to submit conclusions that are undeniably authoritative—not the supply chiefs of the armed forces, nor the heads of government bureaus, but top officials of the major oil companies directly responsible for maintaining a continued adequate flow of petroleum supplies for combat needs.

It is the unanimous opinion of these men that the production situation will remain relatively unchanged throughout the year, and that it will therefore be necessary to continue to operate many United States fields in excess of their maximum efficiency rate. During 1946 the effect of increased withdrawals in foreign fields may noticeably alter the world flow movement, but the amounts of oil involved will be definitely limited and not subject to further increase.

Middle East Potential

The situation in the Middle East is being cited as an inexcusable anomaly in some quarters, inasmuch as the proved reserves there are undoubtedly as great as or greater than those of the United States, and because only a fraction of the developed producing potential of Persia, Iran, Arabia and Kuwait is being utilized at the present time. Many people feel that "something should be done" to convert these tremendous reserves into fighting oil for immediate use in Asia.

If crude oil were the only consideration, the Middle East could indeed play a much more important part in oiling the war. Without a single new well nearly 2 million barrels per day could be produced in that area now, and would be, if the situation could be improved thereby. But sour crude is only a raw material, having no more military value in India, China or the Philippines than it has in underground storage in the Middle East. Present refining capacity of the Bahrein and Abadan plants is approximately 422,000 barrels daily, and they are being operated at that rate. About the end of the current year the new Arabian American refinery at Ras Tanura will be in operation, processing an additional 50,000 barrels daily from the Damman and Abqaiq fields for military use.

The Kirkuk field, in Iraq, could be operated at a rate of perhaps 250,000 barrels per day, but only 80,000 barrels per day can be handled in existing pipe lines from the field to Tripoli and Haifa. The Consolidated refineries at Haifa can now process about half of the Kirkuk output, the balance being available for export to refineries in France, Egypt, and less important centers in the Mediterranean area. A new 16-inch pipe line probably will be laid from Kirkuk to Haifa within the next year or so, thus doubling the field's output. Most of this new crude supply, however, will enter the European market.

Limiting Factor

It has been suggested that oil from the Middle East be shipped to European refineries for processing, to replace shipments of products to Europe from the United States and the Caribbean. This movement is already underway, and will be expedited as fast as possible; but in this situation the limiting factor is the condition of European refineries. Allied bombings, plus stripping of the plants by the Germans, have reduced these refineries to about 40 percent of prewar capacity. Until they can be rebuilt Europe will remain a products market, and not a market for crude. By early 1946 the Burgan wells, in Kuwait, will be on production, and may be shipping up to 40,000 barrels daily to refineries in western Europe.

Tanker Use Restricted

Throughout the war the use of tanker vessels for transporting oil to refineries has been curtailed to the greatest possible degree, in order that as many ships as possible might be employed in carrying products. Needless to say, this plan will continue in effect until the defeat of Japan, thus ruling out any possibility of the importation of Middle Eastern oil to reduce the drain on our own domestic reserves, even as a war emergency expedient. By comparison, Venezuelan crude can be considered the equivalent of United States sources of supply, since the Caribbean coast is no more distant from eastern seaboard refining centers than our Gulf Coast.

This latter fact, plus the ability to defend the Caribbean area, is responsible for the stress that has been placed on boosting oil production in Venezuela. By 1946 that country will be producing approximately 1 million barrels per day, or some 200,000 barrels per day more than it was producing at the end of 1944, with a corresponding effect on domestic crude oil demand.

East Indies May Figure

Recent Allied recapture of Tarakan, off the northeastern shore of Borneo, while only a first step in the campaign to recover the East Indies and their oil fields, is of immediate importance due to the fact that a large proportion of the oil produced from Tarakan wells is suitable for use almost directly as ship fuel, and requires only the addition of an "equalizer" oil to meet the most rigid naval specifications. The rehabilitation teams that landed on Tarakan with Australian invasion troops have already succeeded in initiating deliveries of this oil to tankers assigned to the Pacific fleet, and it is expected that the volume thus made available will be expanded to about 15,000 barrels daily by next fall. Thus, a minimum of seven tanker vessels will be freed for other service, and that much less fuel oil will have to be supplied from the western hemisphere and the Middle East.

As for the war supply potentialities of the other producing areas in the East Indies, a considerable time lag will be involved between the date of capture and the resumption of products shipments, since refining cannot be by-passed as in the case of Tarakan. It is estimated that from six to eight months will be required to get refineries back into operation at such centers as Balikpapan, Lutong, Soerabaja, Kapoean, Tjepoe, Palembang and Medan.

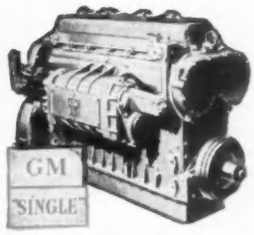
The same situation prevails with respect to Burma's potential. All the Burma fields are now again in British hands, and will be able to produce up to 10,000 barrels daily before the end of this year, but refining facilities at Rangoon must be restored before this supply can be made available for combat use.

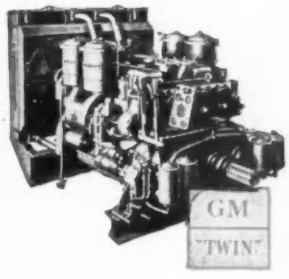
Tanker Use Questioned

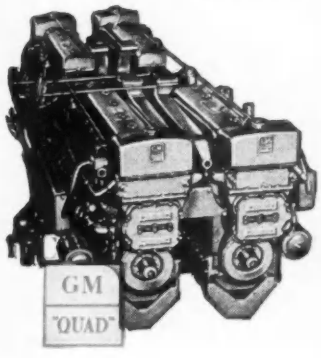
Aside from the limiting factor of present Allied refining capacity, there may be justification for the belief held by some petroleum industry leaders that tanker operating schedules could be made more efficient in the war against Japan. In the European campaign, which was mostly an Army show, top-drawer experts from the industry were assigned the job of reducing tanker turnaround time to an absolute minimum. As a result, actual military performance was greatly speeded.

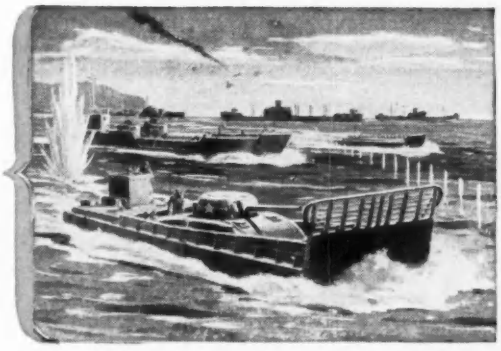
On the other hand, the war in the western Pacific is essentially a Navy show, and it is asserted that the Navy has not seen fit to call in civilian transporation experts to streamline the operations of the tanker fleet that is serving it. If this is true, then it is unfortunate for all concerned, for it is obvious that whatever haulage and distribution problems are involved in getting fuels and lubricants to the Pacific front are multiplied in scale several times over those that were faced and licked in bringing the European struggle to a conclusion. If the plans of the Navy do not include drawing on the knowledge and experience of the petroleum industry's best traffic brains, then the plans should be revised without further delay.

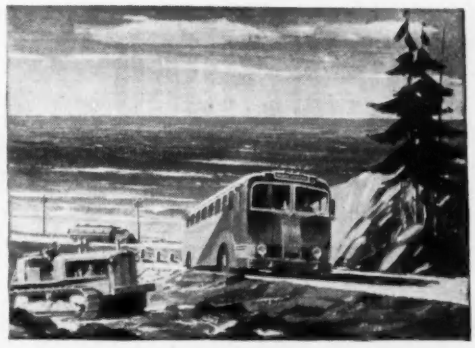
It has been reported that the Navy favors the use of tankers as mobile storage units accompanying the fleet forces wherever they go, and that loaded tankers are thus held for weeks at a time before their cargoes are discharged. It has been suggested that greater efficiency would be secured if the Navy were to set up a number of tank storage depots at advanced locations, where large tankers could discharge cargoes immediately and be kept in continuous delivery service. Small tankers could then be used as shuttle units for actual fleet servicing as required from day to day.

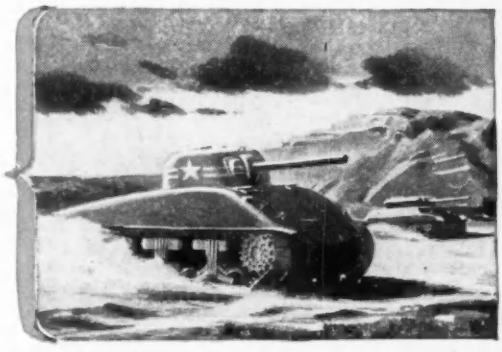


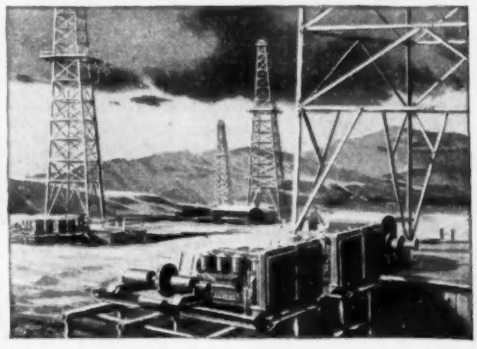


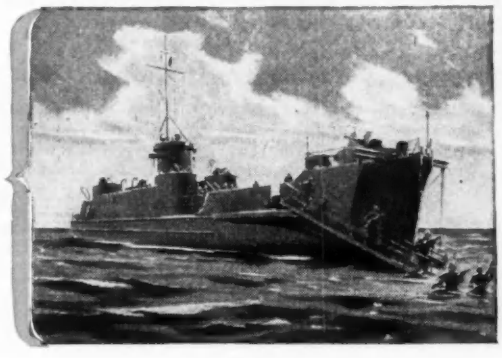


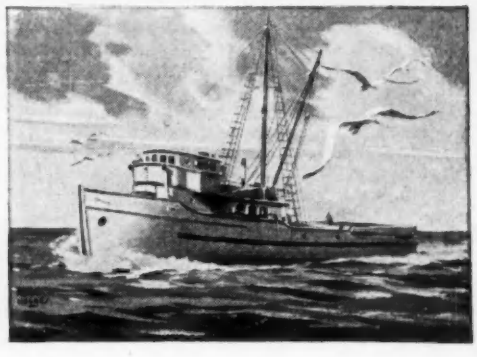












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May Drilling On Schedule

DRILLING proceeded during May about on the schedule of the Petroleum Administration for War, and for the first five months of 1945 similarly U. S. completions have been closely in line with the PAW program.

In averaging 463 per week during May, completions reflected the customary accelerated activity for this season of the year. Although this figure was somewhat lower than the 504 completions weekly of April, it was substantially higher than for each of the earlier months of the year.

Meanwhile, continuance of development at about the May rate is indicated for June, as there were 3820 wells drilling and rigging up on June 1, compared with 3832 on May 1.

In setting up 27,000 completions as the objective for 1945, the PAW sought an increase of 12.5 percent over 1944, and for the first five months of this year this ratio of increase was slightly exceeded. The 9968 completions recorded for January-May, 1945, represented an increase of 13.2 percent over the 8805 completions in the first 5 months of 1944.

That the 27,000-well goal for this year will be reached is promised by indications that drilling will proceed according to plan at least through the third quarter. What the fourth quarter will bring remains more conjectural, but the outlook is hopeful in view of improvement in materials and manpower. It appears possible, in fact, that in the final quarter there may be more drilling than originally contemplated, if the materials situation in particular will permit. There is, of course, a definite need for not merely normal but above-normal drilling henceforth, instead of the subnormal development which has been necessary for several years because of the shortages of men and materials. Wildcatting especially will be encouraged by government agencies in recognition of the need for building up producing ability, following the heavy drawing on existing fields to meet the record-breaking wartime demands for petroleum.

While drilling in the United States has been about 13 percent more extensive this year than last year, results have varied materially for the different states. The sharpest increases over last year have been in PAW District 3 and several other states, including Oklahoma. Texas had 31 percent more completions than last year for the first five months; Mississippi showed almost a four-fold expansion; Louisiana a 38 percent increase; New Mexico an 11 percent gain; and Arkansas a 14 percent decrease. These results were in line with the plans to concentrate activity especially in District 3, where possibilities of developing added producing ability were considered good.

Decline in Kansas

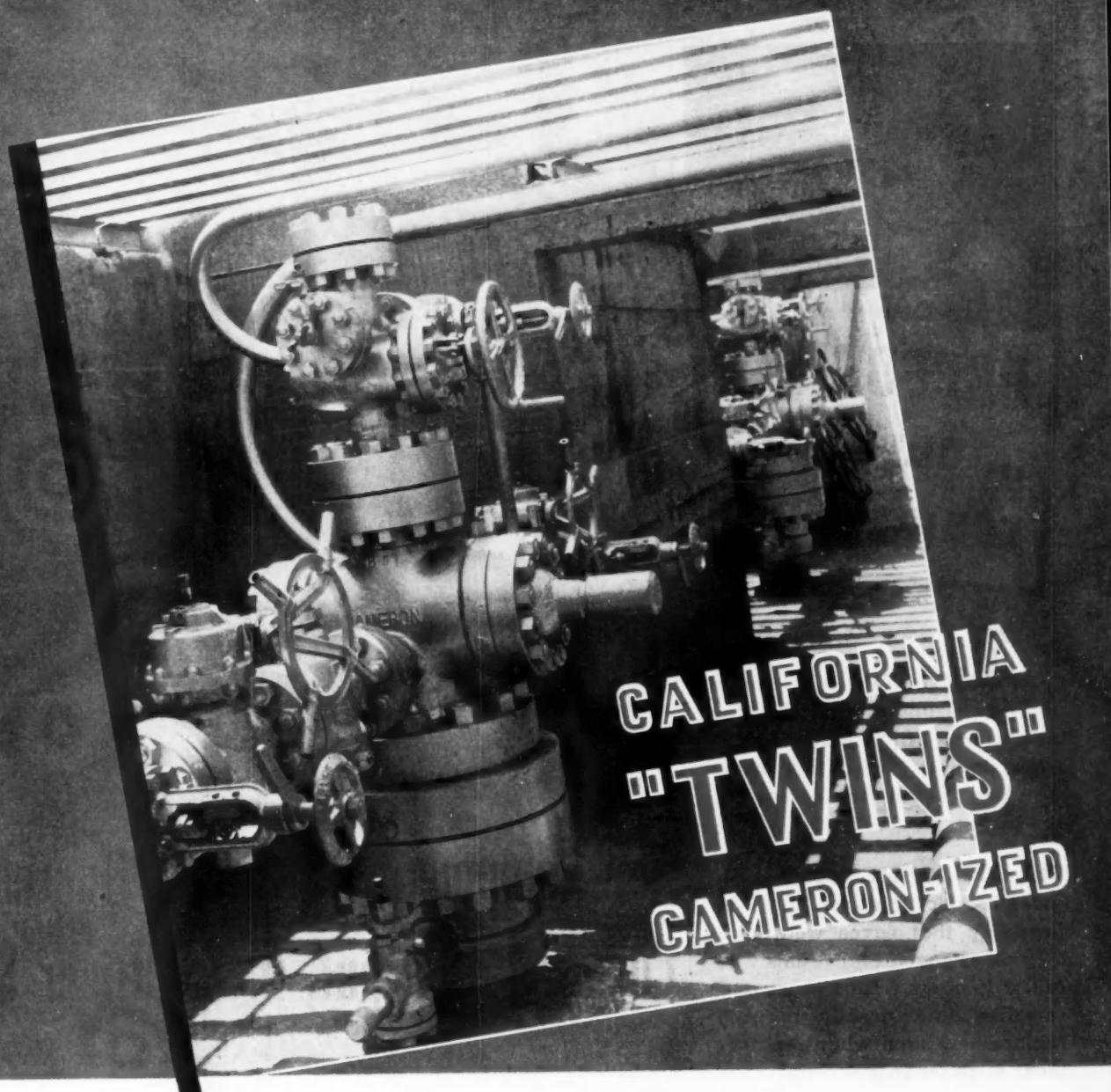
Oklahoma had 50 percent more completions than last year for the first five months, reflecting development of important new reserves at West Edmond and in other fields. But Kansas showed an eight percent decrease in completions, Kentucky a 31 percent decline, Illinois and Indiana each a four percent increase, Michigan a 34 percent gain.

U. S. Completions 13.2 Percent Above Last Year for First 5 Months

(Figures compiled from weekly reports of editorial men, with following exceptions: Illinois from Illinois Geological Survey; Indiana from Indiana Division of Geology; Missouri from Missouri Geological Survey; Allegany, New York, Bradford and Kane-Clarendon, Pennsylvania, from the Producer's Monthly; Tennessee from Tennessee Division of Geology.)

	MONTHLY COMPLETIONS: May, 1945								CUMULATIVE COMPLETIONS: First Five Months								RIGS IN OPERATION					
	Details for May, 1945					Total Completions				Details, January-May, 1945					Total Completions				Details for May 31, 1945			Total: Drilling and R. U.		
	New Wells				Old Wells Deepened					New Wells				Old Wells Deepened										
State or District	*Oil	Gas	Dry	Others[6]		May, 1945[1]	April, 1945[3]	May, 1944[2]	Total Footage May, 1945	*Oil	Gas	Dry	Others[6]		Jan.-May, 1945[4]	Jan.-May, 1944[5]	Percent Change	Total Footage 5 Months 1945	Drilling	Rigs Up	Shut Down	May 31, 1945	April 30, 1945	May 31, 1944
Alabama	2	1	1			4	2	4	9,924	3	1	6			10	10		35,130	3	3	1	6	3	4
Arizona																3								2
Arkansas	15		11			26	14	11	102,911	36	1	30		1	68	79	— 13.9	275,598	24	3	4	27	28	43
California	194	8	33			235	131	152	970,910	736	17	115		5	873	788	+ 10.8	3,546,787	261	59	32	320	316	373
Colorado							4			9		2			11	8	+ 37.5	60,287	23	2	3	25	21	13
Florida			4			4			18,896			8			8			53,155	5			5	6	6
Georgia				1			1					3			3	1	+200.0	12,928			2			2
Illinois	82		49	3	15	149	125	129	392,334	366		231	6	72	675	650	+ 3.8	1,570,754	170	43	26	213	173	199
Indiana	12	1	15			28	28	24	47,825	39	5	79		1	124	119	+ 4.2	198,960	26	18	9	44	37	34
Iowa												1			1	2	— 50.0	1,250					1	1
Kansas	85	16	53	1	10	165	124	102	507,545	287	51	259	3	33	633	686	— 7.7	2,011,631	241	16	11	257	238	236
Kentucky	18	4	15			37	26	39	73,314	71	30	78	1	1	181	262	— 30.9	354,095	31	21	9	52	46	78
Louisiana	53	3	37			93	88	74	717,372	238	22	132		2	394	285	+ 38.2	3,124,044	164	11	9	175	188	136
North	13	3	13			29	29	27	147,545	53	18	54			125	91	+ 37.4	618,178	61	6	5	67	56	50
South	40		24			64	59	47	569,827	185	4	78		2	269	194	+ 38.7	2,505,866	103	5	4	108	132	88
Michigan	28	8	34			70	76	44	167,549	132	14	160			306	229	+ 33.6	812,897	98	12	24	110	137	113
Mississippi	22		16			38	30	8	234,248	85	3	70			158	42	+276.2	1,029,313	65	3	9	68	67	33
Missouri			1			1	5	3	224	2		14			16	9	+ 77.8	27,382	5	3	4	8	6	9
Montana	10		2			12	14	32	25,904	51	7	15			73	117	— 37.6	191,955	48	7		55	53	80
Nebraska												2			2	7	— 71.4	7,018	3			3	1	1
New Mexico	25	1	2			28	34	33	91,603	132	6	47		1	186	168	+ 10.7	648,359	81	5	7	86	82	88
New York	61			34		95	110	116	127,679	259		2	145		406	508	— 20.1	542,966	88	14	22	102	107	114
North Dakota																			1			1		4
Ohio	23	35	35			93	69	70	241,664	77	121	140			338	338		889,796	170	20	42	190	180	180
Oklahoma	117	13	83	5	6	224	178	139	933,939	576	45	298	15	20	954	634	+ 50.5	4,110,667	461	36	21	497	489	347
Pennsylvania	119	18	7	101	3	248	267	235	423,116	576	75	17	500	8	1,176	1,135	+ 3.6	1,990,662	264	33	57	297	292	263
South Dakota																			1			1		1
Tennessee			1			1	1	1	3,707			2			2	6	— 66.7	5,890	1			1	1	7
Texas	397	47	233	1	7	685	619	492	3,178,308	1,691	288	961	18	39	2,997	2,284	+ 31.2	13,487,332	1,132	38	121	1,170	1,205	981
E.Tex.Border	1	4				5	7	2	33,127	2	23	7			32	6	+433.3	210,967	31		3	31	32	17
E. Tex. Field																3								
RestofE. Tex.	14		8		1	23	17	24	144,255	43	3	39		2	87	119	— 26.9	580,112	39	2	16	41	43	56
North Texas	83	1	81		3	168	127	114	470,545	350	5	292	16	7	670	528	+ 26.9	1,679,995	158	4	15	162	139	148
West Central	14	5	19			38	62	32	114,189	72	26	89		2	189	159	+ 18.9	516,267	81	4	33	85	71	56
West Texas	139	3	44			186	150	140	912,943	583	7	186		16	792	631	+ 25.5	3,741,093	381	6	40	387	466	385
Panhandle	17	19	2			38	63	20	118,356	81	145	16		4	246	87	+182.8	777,441	135	5	6	140	123	83
Upper Coast	37	4	26		2	69	60	47	508,177	173	22	100		5	300	208	+ 44.2	2,199,962	92	8	2	100	98	84
Lower Coast	67	8	26	1	1	103	80	59	647,557	261	44	124	1	2	432	339	+ 27.4	2,738,813	146	6	3	152	158	127
Southwest	20	3	20			43	48	47	167,899	110	13	87		1	211	168	+ 25.6	848,648	48	1	1	49	53	48
S. Central	5		7			12	5	7	61,260	16		21	1		38	36	+ 3.6	194,034	21	2	2	23	22	12
Utah																								1
Washington																			1			1		
West Virginia	6	53	9		6	74	56	67	175,739	21	231	42		20	314	373	— 15.8	793,784	63	10	15	73	88	78
Wyoming	2		1			3	19	10	13,420	46	1	13			60	62	— 3.2	281,120	59	6	1	65	67	57
Total U. S.	1,271	208	642	145	47	2,313	2,021	1,785	8,458,041	5,433	918	2,727	688	203	9,969	8,805	+ 13.2	36,063,760	3,489	363	435	3,852	3,832	3,482

* Includes distillate wells. [1] Wells completed in 5 weeks, or 35 days, ended June 2, 1945. [2] Wells completed in 4 weeks, or 28 days, ended May 27, 1944. [3] Wells completed in 4 weeks, or 28 days, ended April 28, 1945. [4] Wells completed in 22 weeks, or 154 days, ended May 27, 1944. [5] Wells completed in 22 weeks, or 154 days, ended June 2, 1945. [6] Water input, gas injection, and salt water disposal wells.



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● Cameron well heads . . . especially Cameron ram type tubing control heads and "test-weld" type casing heads . . . have demonstrated their high degree of safety and efficiency on hundreds of the world's deepest, highest-pressure well completions.

Here, for example, are two Cameron Safety Xmas Trees on high-pressure gas wells recently completed in a California field. The oil string, which is slip-suspended, is sealed and pre-tested with the unique Cameron Type "M" test-weld flange. Tubing is suspended and sealed on the closed rams of the tubing head which provides ram-type blowout preventer control during every step of the completion operation. By using a hanger nipple equipped with back-pressure valve, the highest pressure wells may be washed absolutely clean with complete safety.

The full line of Cameron well head equipment, as well as the widely used Cameron Closed Pressure Method of Well Completion, is described in your Composite Catalog, a reprint of which will gladly be sent to interested operators on request.

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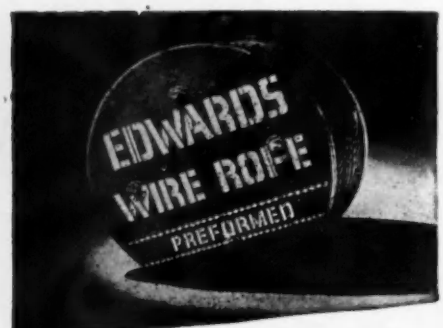

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This typical Shensi well produces four barrels of oil a day and is completely hand-operated

New Equipment Will Greatly Increase China's Oil Output, U. S. Officer Says

IN its quest for vital war supplies from overlooked the possibility of increasing local sources the U. S. Army has not supply of gasoline from China's oil fields.

Lt. Col. Charles H. Andrus, San Antonio oil operator and petroleum engineer who has been in ordnance and transportation duty with the U. S. Forces in India-Burma and China, has completed a special survey of oil-producing areas in China and has reported that a considerable gain in output can be effected if prompt steps are taken to install a moderate amount of refining equipment.

Colonel Andrus also said there is some modern refining equipment dispatched from America already in China and more on the way.

His report follows closely on the announcement in Washington by PAW that both well-drilling and refining equipment is moving into China. Some of the machinery has been in India for several months awaiting shipment.

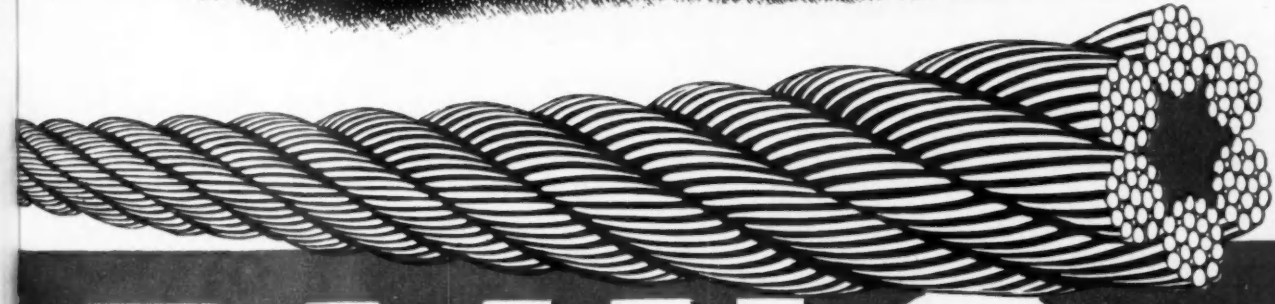
"It is my judgment that with a relatively small amount of new equipment, one northern district can turn out 1,600,000 tons of gasoline annually and of better quality than now is being produced by rather primitive methods," said Colonel Andrus.

The colonel, on his trip into Kansu, Shensi, and other northern oil-producing areas, said he saw seepages, that had been used for thousands of years. Oil in some places is skimmed from the surface of such seepages of oil and water. Sometimes the Chinese laborers doing this work get a barrel a week and they transport it 50 miles or more to a refinery or gathering point. Some wells operated by hand-power pump four or five barrels a day. He reported a half-dozen areas where a plentiful supply of crude could be obtained easily by shallow well drilling equipment. An ordinary water well-drilling rig would do the job. Oil is of high quality, paraffin base.

Colonel Andrus said the big effort should be placed on speedy installations of machinery before winter arrives in the oil-producing areas.

Prior to his wide experience in oil operations in the United States, Colonel Andrus served in the regular army. As a second lieutenant he served under then Lt. Col. Dwight D. Eisenhower and later was in charge of heavy tank construction at Rock Island arsenal. He resigned from the army in 1920. When the present war started he was directly commissioned in the United States Army as captain in ordnance, in April, 1942, and served as ordnance officer at Camp Polk, Louisiana, and Camp Howze, Texas. He was for a time on the staff of Maj. Gen. Charles L. Scott, Armored Force, Fort Knox, Kentucky.

...OF ROEBLING-MADE STEEL!



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WIRE PRODUCTS

Maximum Utilization of

Manpower

Management is urged by PIWC study to make a new examination of its supervisory and personnel problems.

THE means of achieving maximum utilization of man power lie in management itself. Each operating unit has varied circumstances and no general or one-time remedy can be fully effective. Only individual executive management can carry out a program of self-inspection, determination of causes, establishment of corrective policies, procedures and a follow-through to assure effectiveness.

PIWC Study

All of which is another way of saying that it takes some hard work to get the most out of available man power nowadays. It isn't enough for management to set up a program and turn it over to someone else in the hope that everything will tick along smoothly. Realizing this, the Petroleum Industry War Council has prepared a study directed personally to the executive management of both large and small oil companies, called "Effective Man Power Utilization in the Petroleum Industry," wherein oil company executives, local managers, the independent producers or refiners, the marketers, and others in responsible positions are urged to make a checkup of what is actually being done in their organizations.

The study commends the oil industry for its use of man power so far. "It is true that the oil industry has maintained a good level of labor utilization," it says, "in relation to its huge productivity. It is also true that much of this production achievement comes from technical and operating ingenuity. If management throughout the oil industry will now give consideration to all levels of its manpower problems equal to that given technical, operating and material phases of its business, surprisingly increased productivity can be gradually attained."

The complete report can be obtained from Petroleum Industry War Council, 1625 K. Street, N. W., Washington, D. C. Highlights of the recommendations follow:

Factors inherent in management include supervision, clear-cut understanding of functions, duties, responsibilities and authorities. Top executives are urged to reexamine their organizations and be sure that each supervisor understands his relationship with other management personnel. Man power utilization and maximum productivity are related directly to the adequacy of supervision.

Exchange Needed

Lack of established channels for information exchange between line and staff departments and within particular departments themselves is a barrier to fill man power utilization. The "know-how" achieved in one location may have tangible benefits when applied in another.

Management should be sure that personnel and industrial relations departments work closely with line organization and that these departments assist in such functions as employment, training, labor relations, safety, medical and health, benefits, wage and salary administration, job and employe analysis, organizational and managerial development, and basic research in all these fields.

Sound company practices, policies and benefit programs have a tangible value in attracting and holding man power. To be effective, they must be known to and understood by employes and administered without discrimination.

Despite the fact that turnover in the oil industry is relatively low, it is well to consider means by which turnover rate might to reduced. The exit interview, if properly used, is one of the most useful tools in reducing turnover.

One of the quickest and best methods of increasing man power utilization and productivity in both large and small organizations lies in modern training programs. Many oil companies have installed the Training Within Industry Program sponsored by the Training Bureau of the War Manpower Commission. These courses cover fundamental phases of supervisory training and are adaptable to both large and small operating units. Also, through the cooperation of the American Petroleum Institute, special courses are available for petroleum industry workers.

As a corollary to training, specific upgrading procedures should exist so that newly developed skills of employes can be utilized to the best production advantage.

Employe Morale

Experience proves that working conditions within an establishment have a most important bearing upon effective utilization of man power. Good safety practices have been recognized in the petroleum industry for many years as having an important influence upon employe morale.

A production, pipe line or refinery operation requires the services of many employes and it is quite easy for supervisors to forget the importance of giving proper consideration to each individual. Morale is the sum of individual employe mental attitudes. Good morale expresses itself in the will to work and is vital to high productivity in any establishment. The number of grievances brought up by individuals is an indication of this morale factor, and either too many or too few may be taken as a warning. Too many grievances may indicate poor supervision, bad working conditions, improper rate structure, or other correctable conditions. Too few grievances may mean that employe are afraid to discuss their problems with their immediate supervisor, or fail to do so because they believe that nothing will come of the discussion.

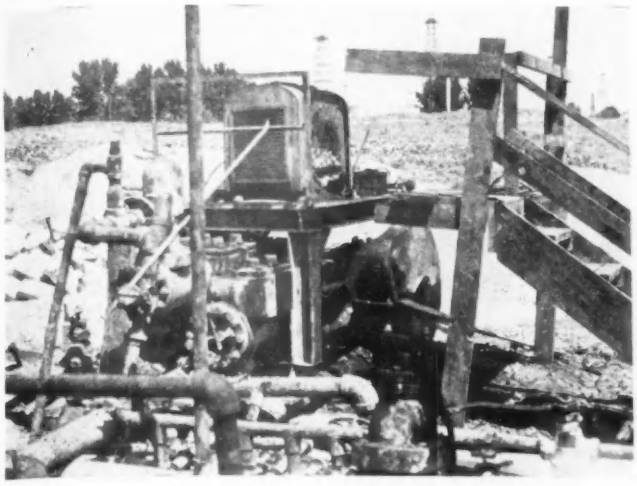
Inadequate compensation sometimes forms a basis for low morale, however, the frequency is less than might be imagined. High morale is not secured by paying high wages alone. The employe is primarily concerned in obtaining a fair rate for the job that he is doing; in receiving as much pay for a given job as another employe is receiving; and receiving a rate comparable to that paid for similar jobs in the industry.

The manner in which the new employe is introduced to his work place and fellow workmen may have a great deal to do with his tenure of employment and productivity. Every employe likes to feel that he is in an integral part of a productive, smooth-working organization, and his first impressions frequently determine his attitude.

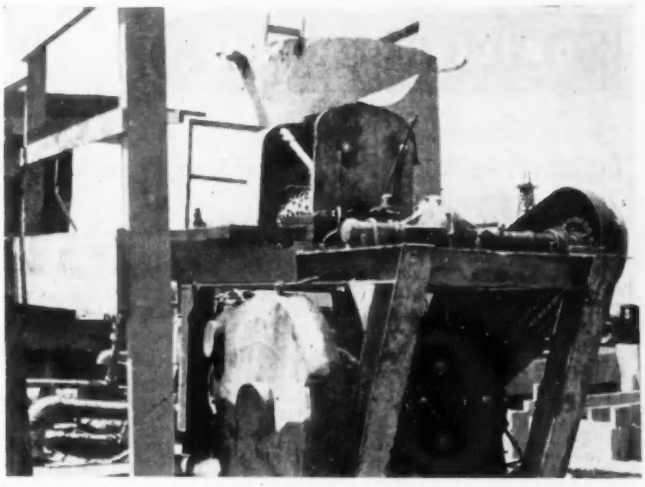
Proper Approach

A review of recruiting methods in use by oil companies throughout the country discloses varying degrees of success for individual approaches. There is some reason to believe that a good many companies have not employed the methods found by experience to be most effective in securing employes needed. Most companies have found it essential to centralize their employment activities within an establishment or an area in order to do an effective job. Many have derived benefit from a cooperative program with other oil companies. Assignment of competent employment managers and careful matching of a prospective employe's prior work experience has solved many difficult problems. A few companies have used preemployment tests to advantage.

Many companies have partially solved their recruiting problems by relaxing their employment standards, following reengineering of jobs to permit use of employes with lower skills or physical qualifications. A detached study of many jobs will show a surprising number of manual repetitive motions and other elements which may be reassigned to unskilled workers, thereby permitting skilled personnel to concentrate on the job elements requiring skill and experience.



Mounted directly above the pump, and removable when the supports are unbolted from the pump skid, the engine setting shortens the drive and conserves rig space without interfering with pump maintenance or adding to the number of units to be handled when shifting locations.



The rear end of the engine frame is formed at an angle to facilitate checking the pump main bearings and to provide a warning against injury through collision with the overhanging horizontal members of the unit. The frame is braced with gussets at the angles to relieve the end welds of vibrational stresses.

Double Decking of Mud Mixing Pump Conserves Rig Space

SINCE space at drilling rigs frequently is at a premium, it is advantageous to keep the standby circulating mud pump system to as small overall dimensions as possible. One contractor double-decks his equipment in the effort to conserve ground space, and at the same time unitizes pump and power unit so they are handled as a single piece of equipment during moving operations.

An engine support is mounted above the pump skid, being carried on reinforced structural steel legs which attach to the skid outside the bolting points for the pump bed casting. This frame is carried high enough to clear the pump body and allow work on the valves without restriction, with the drive portion of the unit set out over the pump gear housing.

Drive between the gas-gasoline- or butane powered engine and the pump is remarkable for its compactness. The engine—salvaged from a car or truck—is mounted with its clutch and transmission intact, being set with the drive shaft at right angles to the pump gear shaft. In place of the usual long propeller shaft of the original automobile drive, the splined stub carries its universal joint, to which the pinion shaft is directly connected, and the housing is joined directly to a flange matching with the end of the transmission box. The drive is thus enclosed, and the entire shafting runs in the oil bath from the differential housing.

One end—what would normally be the left rear wheel end of the axle—is cut short and anchored to the housing to prevent turning. A cap, welded to the end of the abbreviated housing, provides seal at this point and also serves as retainer to prevent end travel of the anchored portion of the axle. On the other end of the axle, in place of the usual wheel, is placed a sprocket, held by bolts passing through the hub on the original spacing pattern.

A second sprocket, giving the desired speed ratio between axle and pump jack shaft, is attached to the latter, with a chain of the proper length utilized for the final exterior drive. This chain operates under a cover which protects the outer portion of the chain, preventing accidental contact; while the inner side is open, permitting lubrication as the unit operates.

By means of the various speeds incorporated in the automobile transmission, the pump may be operated at any one of the three speeds thus made available, without varying the speed or power output of the engine. The clutch is operated through a pipe handle over the usual pedal linkage, so that the gears may be shifted by an operator standing alongside the unit. The reverse gear is found useful when the pump is being worked on, as it permits accurate spotting of any piston at slow engine speed with all backlash in the pump drive taken up by rotation in the direction opposite to normal running.

The original automotive dashboard carries the various pressure gauges connected with the power plant, as well as offering site for mounting mud-pressure indicating and recording devices.

The radiator and cooling system, transferred from the car frame to the specially fabricated support over the pump, serves to cool the engine, being tied in to the rig water supply lines for quick make-up of any losses during operation.

With a stub shaft connecting the transmission and rear axle, drive is enclosed up to the final linkage between axle end and pump pinion shaft. The gear box gives three speeds on the pump, enabling the engine to be run at optimum speed for various pressure and volume changes in the mud requirements.

Builders' Jack on Special Footing Provides Support for Mud Flow Line

RIGGING-UP MUD LINE

Rigid support of the mud line between the point where it leaves the well-head units and the turn toward the screen is necessary to relieve the flange joint of vibrational stresses, and maintain the proper slope to the line to insure thorough scouring of deposits. Under many types of drilling conditions, it is also desirable to be able to adjust the outflow line during the campaign, without shutdown or interruption to flow.

One drilling contractor uses an ordinary house-mover's screw jack as the basis for a mud-line support, welding the base to an extension which in turn is welded in the center of a five-foot length of steel channel. From points near the ends of the canner, three-inch pipe braces extend upwards at angles of 45 degrees to meet at the top of the jack base. This structure is amply strong to support the mud line under any conditions, and may be mounted on blocking to bring the top within range of the adjustment screw.

A saddle, welded to the swivelled head of the jack, contacts the pipe, at the same time leaving clearance below for rotation of the jack bar to attain the desired elevation. A short tie of wire-line cable, with turn-buckle for adjusting is looped around the line near the jack setting to permit the line to be held snugly down against the saddle.

Handles welded to the inside of the channel at each end assist in placing the jack unit without risking injury to the hands of the crewmen, or requiring placing with hoist or winch.

$5.00 is paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, P. O. Box 2608, Houston 1, Texas

Oil Drum Serves as Low-Pressure Gas Scrubber

FUEL GAS CLEANING

One Kansas operator in an area where gas pressures are low, found a way around the shortage of welders by improvising a scrubber for his unit from an oil drum. The drum was placed at right angles to the gas flow line, with the stream entering the lower connection (the ¾-inch vent tap in the head) and leaving through a bushed-down connection made into the two-inch opening.

The chamber permits settling out of any fluid which may be entrained in the gas steam, insuring dry, clean gas out of the upper connection.

Since the amount of fluid collected is relatively slight, the drum is simply disconnected from the pipe and canted up onto the tapped head to allow any accumulation to be poured out, after which uniting the two joints again puts the scrubber into service.

If the unit be set in dry, sandy soil, no painting or outside protection is required, but if the location be damp, a coating or two of ordinary pipe-line enamel, such as is used for pipe protection on trunk systems, may be applied to the drum, and it will then outlast the other portions of the set-up, unless the gas being scrubbed contains sulphur or corrosives, in which event it may be necessary to allow for occasional replacement—an investment which normally is less than the cost of welding up even the simplest container of similar capacity from scrap pipe.

If the setting is subject to flooding, some weighting or anchorage must be provided to insure against broken connections and gas loss.

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WATER GAGE SET

For oil field, locomotive type and marine boilers. Water shows black — steam shows white; the water level is unmistakable. U-Bolt construction is strongest and simplest to service. Glass replaced by simply removing nuts on face of gage . . . unnecessary to work between gage and boiler. Conforms with A.S.M.E., Federal and State requirements when used for pressures specified by their respective codes.

This is one of the complete line of Penberthy gages that meet every liquid level gage requirement.

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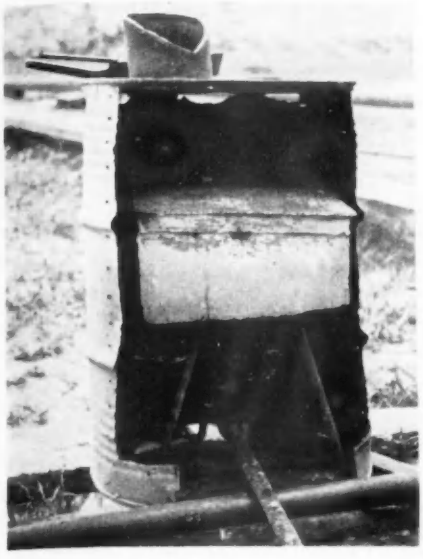
DRILLING HINTS

Rig Cooking "Range" Simplifies Hot-Meal Problem



On wildcat locations, which may be many miles from the nearest cafe or other commercial eating places, some means for cooking meals frequently is included in the rig equipment. One such stove, applicable where butane or natural gas is used for fuel, is made to fit in the shell salvaged from a discarded oil drum. The top of the cooking portion of the stove or grille is formed from a rectangle of nonskid steel floor plate, set on a bracket which permits positioning the burner below it. A hinged apron prevents the heat from the burner interfering with the rig "chef" at his job, and also aids in preventing the fire from being blown out during bad weather.

FIELD STOVE

The drum, with a section cut out to give access to the hot plate, also serves as "steam table," a skillet or pan set on it being kept hot from the heat transmitted to it by the gases from the burner below.

Scrap Drilling Line Serves as Drill Pipe Spacers

Replacing the usual bits of dunnage, scrap timber and other lumber normally used to separate the adjacent tiers of drill pipe on the rack, one contractor utilizes scrap ends from his 1⅛-inch drilling line, stringing out two sections of the line near the joints on the lower tier of pipe, and rolling the second layer out over this to prevent the pipe from hanging up or joints contacting.

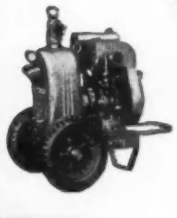
HANDLING DRILL STEM

Where the pipe spreads out over a wide rack, two or more short sections of scrap-wire line may be used, as being less difficult to place and capable of being removed in part as soon as some of the lower layer of pipe is removed.

On the move, the cable "stringers" may be coiled and laid on the most convenient of the skids, or even tied with bits of cordage and wrapped around the reel of good drilling line.

There is ample stiffness in the drilling line to withstand the load of a joint over the gap between first-tier units.

Sterling
PUMPS • HOISTS • LIGHT PLANTS



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SAVE MONEY
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For more detailed information see pages 2814 and 2815, Composite Catalog.

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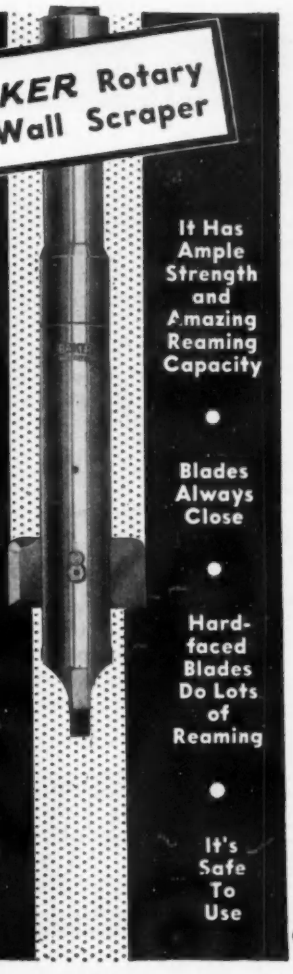
BAKER Rotary Wall Scraper



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Setting Liners
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Reaming Larger Hole for Gravel Packing
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Bottle-necking for Cement Jobs
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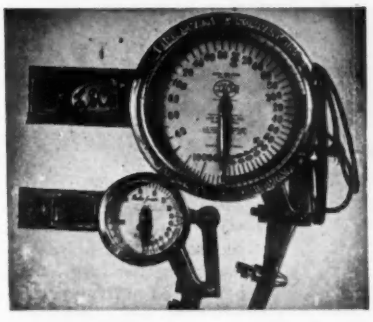

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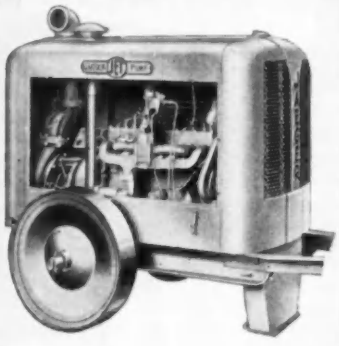

This Jaeger model 4-P has scores of uses on pipe lines. Used for cleaning slush out of storage tanks; to clean out reservoirs; to pick up oil in case of line break and of course for pumping out water wherever necessary. It delivers a large volume at low pressure.

BROWNING-FERRIS MACHINERY CO.
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THE POSITIVE LEAK PREVENTER

Riser and Swing Provide Dry Steam for Auxiliary

Where steam for auxiliary use, such as powering a sand-line reel, is to be taken from the main in advance of operations on the rig, the main header may be used as improvised steam trap or "water leg" if the outlet pipe be tapped into the top of the steam-line run. In the installation shown, the riser extends upward far enough to accommodate the control valve and a hammer-type union before giving way to a swing which drops the line again to ground level.

STEAM TAKE-OFF

Such a hookup takes dry steam from the top of the main, and because of the numerous joints between main and auxiliary throttle, has sufficient flexibility to absorb vibration as well as expansion changes in either or both lines.

Mud Line Branch and Valve Insure Full Casing

Spotting close together the control valve in the mud return line and a quarter-turn valve on a branch of the mud line to the conductor pipe permits high-pressure fluid to be pumped into the well with a minimum of lost time when the kelly connection or other above-floor mud equipment is disconnected. The flow line enables mud to be applied at full pump pressure to the casing and additional fluid provided in case drill pipe difficulty prevents supplying sufficient mud through it to check circulation loss.

BLOW-OUT PROTECTION

Such a line, on account of different periods of vibration in the conductor pipe and the mud line, should be connected with a swing to absorb differences, or should have in its make-up one or more flexible couplings. Some such provision must be incorporated in the setup.

Hinged Ladder Speeds Access to Truck Platform

A simple shop-made ladder attached by hinges to the rear of the field truck is saving time for one production field crew. In work that requires considerable climbing up and down the side of the truck, this short ladder greatly facilitates the job, especially when the men are carrying heavy tools or fittings in their hands. Sides of the ladder are of 1½-inch pipe and rungs are of short pieces of 1-inch material. The top is hinged to permanent fittings welded to the steel bumper pad at the end and to one side of the truck bed.

TRUCK LADDER

Upon completion of a job, the ladder is folded back over on the truck bed where it is held in place by the fixed hinges. Little truck bed space is taken.

Closed Box with Welded Baffle Serves to Intercept Tramp Materials in Flow

LINE PUMP PROTECTION

Originally installed to intercept rocks, welding scrap—icicles and bits of rod—which were swept along by the liquid in the suction lines, and thus to protect the main strainer baskets from damage, an auxiliary sump or baffle-box is frequently effective in preventing excessive cleaning of the strainers after the line has been cleared of foreign materials introduced at the time of its construction. This is particularly the case when the crude being handled is of the paraffin-base type with the paraffin readily forming balls or slugs during pumping.

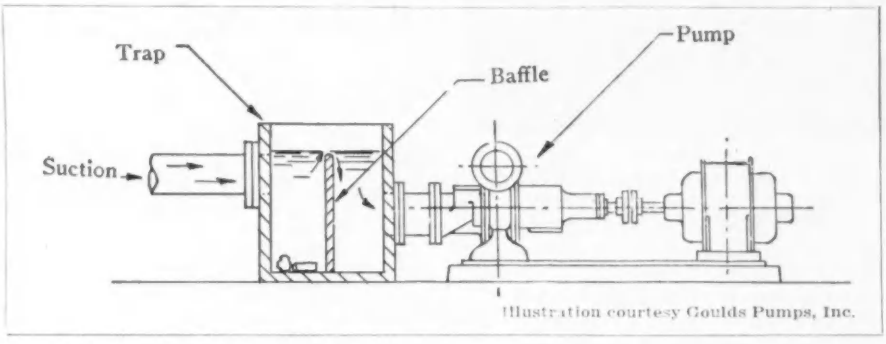


Illustration courtesy Goulds Pumps, Inc.

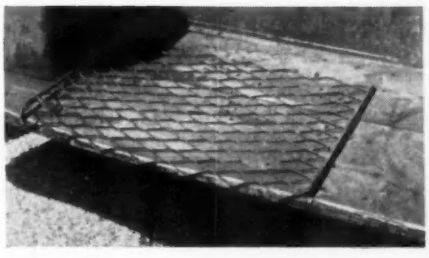
The box may be welded up from tank plate scrap, with a baffle extending at least as high as the upper edge of the inlet and outlet pipe connections, and with ample flow above the baffle to prevent restriction in the stream. The cover should be removable for occasional cleaning, or the upstream half should have a large-diameter clean-out drain line so as to permit occasional clearing of the trap space. A smaller clean-out on the downstream section is also advisable, in case the paraffin slugs manage to surmount the barrier when the upper half is nearly filled.

A ¼-inch vent line valve should be installed in the top of the unit so as to allow air to be released and permit the unit to fill with fluid.

Expanded Metal Facing Renews Safety Tread on Truck Step

TRUCK SAFETY

Falls caused by employes slipping on oily or other unsafe footings has proven to be one of the largest contributors to lost man hours. Protective devices can usually be constructed with little metrial and small costs for labor. Such a device has been made by one oil field operator as shown in the photograph. This operator had numerous reports of truck drivers having slipped on the oily running boards of their trucks.



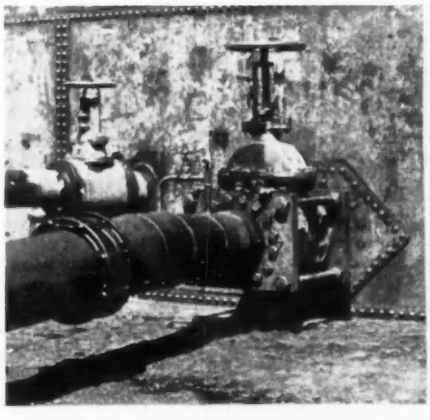
When the trucks were new, non-skid treads were effective, but when this non-skid tread wore off and oil from the shoes of the drivers got on the running boards, the accidents occurred. The protective device in this case was a piece of expanded metal costing less than one dollar. Fourteen gauge metal of the type with the sharp edges turned up, was selected. The size was 10x18 inches and half a dozen tack welds held the metal in place. Because the sharp metal edges were turned upward the tread was found to be self-sharpening and did not clog with use.

Facing Plates and Through Bolts Protect Gate Setting

GATE VALVE REINFORCEMENT

Where large diameter lines must be carried for some distance above ground from the tank valve to fire wall or manifold connection, the downward thrust of the weight not only dangerously stresses the tank plates, but may also distort the body casting of the valve — especially when, in case the large line is a suction feeder, the working pressures call for only a light unit.

Be reinforcing the tank plate with an extra thickness over an area immediately surrounding the outlet, and using a second and matching plate outside the gate valve, it is possible to transfer all the weight and also neutralize any expansion and contraction shifts without adding to the stresses in the valve. The two reinforcing plates, each drilled to the bolt circle of the valve flanges, also carry in their corners heavy bolts which extend between the plates, being pulled up tightly with back-up nuts between the plates to insure desired spacing.



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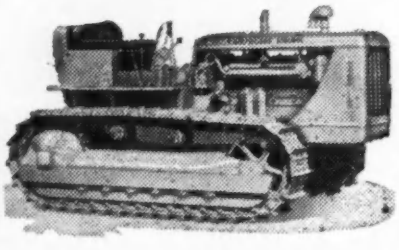

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OKLAHOMA CITY TULSA

Method Gives Stream Flow Data for Quick Check

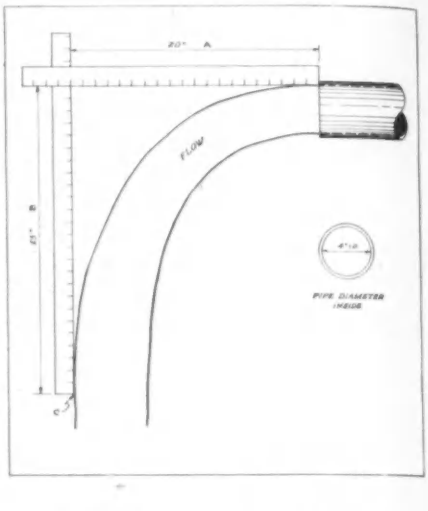
When an approximate rate of flow, as the amount of salt water being made by a well or lease, is required without the need for flowing into tanks and gauging, the desired information may be obtained by the use of a simple formula, which may be applied if the flow can be directed horizontally from a pipe which is kept full.

FLOW GAUGE

The method requires that the pipe be delivering full stream, as any void at the top would not be compensated for by the method of figuring output.

Having established full flow, it is necessary only to measure the distance reached by the stream before the flow falls vertically, determining also the point where the vertical drop occurs with reference to a level carried out from the top end of the pipe. The flow, in gallons per minute, then is equal to the diameter of the pipe squared, multiplied by the horizontal distance this obtained, and then by the factor 2.56. The product thus obtained is divided by the square root of the vertical distance determined as outlined.

As an example, let a four-inch pipe be flowing full, with the horizontal flow



reaching 20 inches, and the point where vertical drop occurs being 25 inches below the top level of the outlet. The formuls then becomes $\frac{4 \times 4 \times 20 \times 2.56}{\sqrt{25}} =$ 163.85 gallons per minute.

Improvised Rake Aids in Maintaining Station Grounds

Where crushed rock is used to provide surface for a station yard, it is necessary from time to time to redistribute the stone to remove footprints, fill grooves formed by dragging material across the yard, and to form sufficient cover over high spots to prevent the growth of vegetation through the surfacing material.

YARD UPKEEP

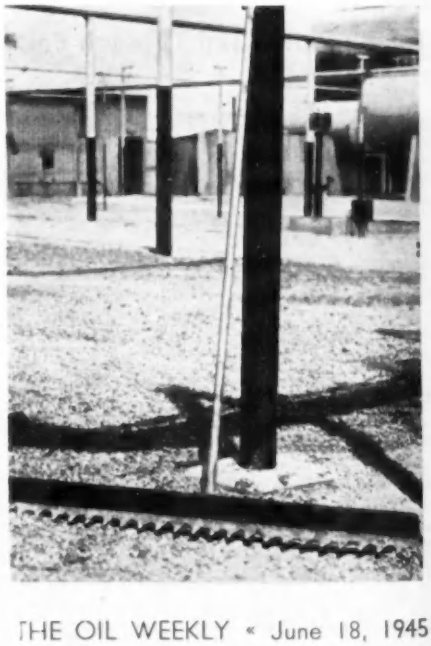
One station devised a rake which speeds up this yard reconditioning. A 3-foot length of 4-inch pipe was slit lengthwise by the welder, making a straight cut down one side, and notching the other in a serrated pattern which, when the pipe halves are separated, forms two toothed sections, each with one straight side.

A socket for a wooden handle is attached to the straight side, being set at an angle which will bring the toothed edge approximately at right angles to the ground when the handle is most conveniently held by the yard worker.

Weight of the pipe is sufficient to cause the pointed teeth to dig into the rock, loosening it and turning it over; while the 3-foot blade serves to redistribute the stone so as to leave it properly leveled.

In one yard where such a rake was required to maintain the stone around the gate settings, and also on occasion to break ground for the gradual seeding of the area between the tanks, the device was improved by the addition of hard-facing metal to the tines or prongs of the rake. These hardened points, after being ground, maintained their sharpness and shape over a long period of use, including that of being pulled by a tractor while two men stood on the back edge of the unit and served to force the points into the hard surface.

Where hard-facing of the points is resorted to, the fingers or tines may be made much narrower and longer than those shown in the photograph, and when reinforced with the hard metal, will withstand the most severe service imposed on them.



Crude Runs to Stills Gain Slightly; Domestic Production Near Peak Level

Continued favorable results in meeting current demand for principal petroleum products were reflected in statistics of the industry for the week ended June 9, as reported to the American Petroleum Institute. Crude runs to stills were increased moderately over the previous week and were fairly close to the highest on record, and domestic crude production, although down slightly from the week before, also was not far short of the peak level of a short time ago.

Stocks of gasoline were reduced in a normal volume, with an addition to military grades partly compensating for a substantial reduction in civilian grades, as production for the week was off somewhat. Gas oil and distillate fuel oil went to storage about normally for the season, despite a slight reduction in production. Residual fuel oil stocks again were lower somewhat, while production was not as large as in the previous week.

United States crude production averaged 4,853,000 barrels daily, down 6000 from the previous week but 331,000 a day of 7.3 percent higher than in the corresponding week last year. Crude runs to stills in United States plants rose 23,000 barrels to 4,827,000 daily, which was 164,000 a day or 3.5 percent above runs in the like week last year. Stocks of crude were increased 1,248,000 barrels in the week ended June 2, the Bureau of Mines reported. They then totaled 224,079,000 barrels, against 234,476,000 on the corresponding date last year.

Production of gasoline totaled 15,256,000 barrels during the seven days ended June 9, down 61,000 from the week before but 1,249,000 barrels or about 9 percent higher than in the like week last year. Stocks of finished and unfinished gasoline were lowered 800,000 barrels during the week, to a new total of 87,896,000 barrels, and that amount was only 1,598,000 barrels more than the 86,298,000 barrels held on the corresponding date last year. Civilian grade stocks were reduced 1,611,000 barrels during the week, having declined to 47,031,000 barrels, which amount was about a million barrels less than the 48,162,000 held a year before. Military and other grades were increased 811,000 barrels to 40,865,000, and that amount was nearly 3 million barrels more than the 38,136,000 held a year previous.

Gas oil and distillate fuel oil production totaled 4,842,000 barrels in the week of June 9, down 15,000 from the week before and 100,000 barrels or 2 percent less than the output in the corresponding seven days last year. Stocks were increased nevertheless by 520,000 barrels during the week and rose to 30,339,000 barrels, which amount was 3,278,000 barrels or 9.8 percent less than the 33,617,000 barrels held June 10, 1944.

Residual fuel oil production of 9,382,000 barrels was 55,000 barrels less than that in the previous week but 626,000 barrels of 7.1 percent more than output in the comparable week last year. Stocks of residual were reduced 26,000 barrels to 38,996,000, and that amount was nearly 13 million barrels or 25 percent less than the 51,946,000 barrels held June 10 last year.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.
(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Crude Oil Prod. Week Ended	Runs to Stills Barrels Daily	Runs to Stills Week Ended	Crude Stocks Barrels	Crude Stocks Week Ended	Gasoline Stocks Barrels	Gasoline Stocks Week Ended	Gasoil and Distillate Stocks Barrels	Gasoil and Distillate Stocks Week Ended	Residual Fuel Oil Stocks Barrels	Residual Fuel Oil Stocks Week Ended
Highs:												
1941	4,337	11–22	4,120	10–18	266,187	3–29	99,727	3–29	[1]54,983	11–15	102,448	1– 4
1942	4,337	2– 7	3,961	1– 3	263,208	3–28	[1]109,281	3–14	47,861	11–14	95,857	1– 3
1943	4,436	11–13	4,331	12– 4	245,752	5–29	94,159	3–20	47,187	11–27	72,881	1– 2
1944	4,762	9–30	4,798	12–30	240,992	1– 1	89,162	4– 1	48,863	10–28	64,744	10– 7
1945	[1]4,887	5–26	[1]4,950	5–26	224,079	6– 2	99,012	3–24	38,298	1– 6	56,074	1– 6
Lows:												
1939	[3]1,601	8–26	3,125	2–18	[2]229,127	10–12	71,152	10– 7	20,722	4–15	105,397	4– 8
1941	3,364	1–11	3,490	1–18	240,399	11–15	79,923	10– 4	28,382	4–12	90,914	7–12
1942	3,297	7– 4	3,393	5–23	231,896	12–12	75,934	12– 5	29,240	4–25	72,962	12–26
1943	3,821	1– 9	3,579	3–13	232,191	1– 9	68,182	10–16	30,732	4– 3	57,596	12–25
1944	4,357	1– 1	4,228	2–12	220,258	9– 9	76,302	1– 1	30,232	4–19	49,737	3–18
1945	4,678	1– 6	4,656	1– 6	[4]218,675	3– 3	86,616	1– 6	26,483	3–17	38,548	5–26

TRENDS OF 1944 AND 1945

Trends in Week Ended:	Crude Oil Production Daily	Crude Oil Runs to Stills Daily	Crude Oil Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gasoil and Distillate Production Weekly	Gasoil and Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1944:									
January 1	4,357	4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,330
January 29	4,409	4,359	240,251	13,427	81,075	4,054	37,266	8,889	52,857
February 26	4,423	4,377	237,137	13,183	85,248	4,558	33,766	8,952	51,387
March 25	4,385	4,443	236,285	13,362	87,287	4,979	31,319	9,013	51,669
April 1	4,383	4,435	234,667	13,824	89,162	4,450	30,530	8,367	51,326
April 29	4,431	4,300	235,342	13,126	88,342	4,284	30,236	8,398	49,985
May 27	4,514	4,532	234,423	13,502	86,468	4,702	32,035	8,568	49,812
July 1	4,587	4,638	228,860	14,052	83,559	4,496	35,360	8,872	52,235
July 29	4,608	4,627	225,112	14,115	82,665	4,833	38,135	8,900	56,280
August 26	4,667	4,698	222,931	14,112	80,740	4,566	41,453	8,680	59,839
September 30	4,762	4,775	222,393	14,494	78,028	4,622	45,329	9,292	64,226
October 28	4,740	4,658	223,235	14,117	79,058	4,772	48,705	8,985	64,382
December 2	4,712	4,693	221,591	14,853	80,427	4,082	45,832	8,981	61,727
December 9	4,704	4,552	220,258	14,611	80,880	4,056	44,436	8,923	60,458
December 16	4,695	4,537	222,075	14,145	82,747	4,353	42,413	8,727	59,280
December 23	4,729	4,682	222,575	14,635	83,355	4,605	40,846	8,798	58,509
December 30	4,705	4,798	222,998	15,342	86,614	4,257	39,495	9,156	57,430
1945:									
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,651	9,252	51,119
February 24	4,777	4,803	219,351	15,500	95,972	4,958	28,753	9,084	46,713
March 31	4,781	4,677	223,782	14,644	98,758	4,548	26,889	9,184	41,745
April 28	4,805	4,780	223,474	14,633	94,068	4,636	28,273	9,379	39,813
May 26	[1]4,887	[1]4,950	222,831	15,194	89,121	4,667	29,184	9,670	38,548
June 2, 1945	4,859	4,804	224,079	[5]15,317	88,696	4,857	29,819	9,437	39,022
June 9, 1945	**4,853**	**4,827**	.....	**15,256**	**87,896**	**4,842**	**30,339**	**9,382**	**38,996**
June 10, 1944	4,522	4,663	[5]234,476	14,007	86,298	4,942	33,617	8,756	51,946
Change:									
In week	—6	+23	+1,248	—61	—800	—15	+520	—55	—26
In year	+331	+164	—10,397	+1,249	+1,598	—100	—3,278	+626	—12,950
In year	+7.3%	+3.5%	—4.4%	+8.9%	+1.9%	—2.0%	—9.8%	+7.1%	—24.9%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922 due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, June 3, 1944.

North Texas Section of AIMME Is Organized

The North Texas Section of the American Institute of Mining and Metallurgical Engineers was recently organized in Dallas and will have jurisdiction over local activities of approximately 200 members residing in 44 counties. The district includes Dallas, Fort Worth, Wichita Falls and Abilene.

Officers elected included Charles Pishny, engineer, Cummins Berger and Pishny, Fort Worth, chairman; Brad Mills, executive secretary, American Association of Oilwell Drilling Contractors, Dallas, vice chairman for Dallas; Gordon Fisher, petroleum engineer, Gulf Oil Corporation, Fort Worth, vice chairman for Fort Worth; K. Bruce Davidson, petroleum engineer, Humble Oil & Refining Company, Wichita Falls, vice chairman for Wichita Falls; R. E. Bright, petroleum engineer, Mercantile National Bank, Dallas, secretary-treasurer.

Aerial Patrol Is Answer To Lack of Line Walkers

L. H. UNDERWOOD

Empire Pipe Line Company of Bartlesville, Oklahoma, has adopted an aerial patrol and reports satisfactory results following a 30-day trial period.

L. H. Underwood of Guthrie, a former pipeliner, contracted with the pipe line company to make two round trips over the system at a lower cost than that of covering it fewer times on foot. Since the offer was made at a time when the company was experiencing an acute shortage of pipe line walkers, the patrol was given a 30-day trial.

Early each Monday Underwood leaves Guthrie and follows the main line to Oklahoma City, thence back to Guthrie, east to Cushing, back to Guthrie and on to Eldorado, Kansas. After pausing overnight at Eldorado, he backtracks the same route on Tuesday. The plane is grounded on Wednesday but another round trip is made Thursday and Friday.

The patrol reported a number of leaks, washes and other hazards during the 30-day trial period. On emergency call-outs, line breaks were located many hours sooner than under previous methods while the management reports that savings in manpower and pumping time have been considerable.

Personnel Changes Made By Shell Pipe Line Firm

Shell Pipe Line Corporation, Houston, has announced the following changes in personnel: R. C. Nicholson has been named superintendent of oil movements with headquarters in Houston. He will have general supervision of oil schedules, tenders, field gauging and line dispatching. G. H. Miller was named assistant to Nicholson, as supervisor of oil schedules and tenders.

L. F. Franklin was named chief dispatcher of the West Texas and New Mexico area with headquarters at Colorado, Texas. Other chief dispatchers are U. W. Clark, for the Mid-Continent area, at Cushing, Oklahoma; M. A. Leonard, for Texas Gulf Coast area, at Houston; and F. V. Maloney, for the Bayou Pipe Line System, at Houston.

Ben L. Browne, heretofore chief dispatcher at the home office in Houston, and Tom J. Madden, chief dispatcher for the West Texas and New Mexico area, are retiring after about 27 years of service.

Two Indiana Pipe Lines Are Authorized by FPC

Federal Power Commission has issued certificates of public convenience and necessity authorizing Panhandle Eastern Pipe Line Company to construct and operate a short pipe line beginning at a point on Panhandle Eastern's Greenfield lateral in Hancock County, Indiana, and extending to Fortville, Indiana.

FPC also authorized Eastern Indiana Gas Company to construct and operate a line extending from Panhandle's line at Fortville to Ingalls, Indiana.

Texas-Empire to Increase Capacity of Midwest Line

Texas-Empire Pipe Line Company is taking steps to effect an increase of 17,000 barrels a day in the capacity of its line between Cushing, Oklahoma, and Sheldon, Missouri. Capacity of the Alluwe, Oklahoma, station will be increased and stations at Sand Springs, Oklahoma, and Scammon, Kansas, which are now equipped but inoperative, will be put into operations.

This is part of the company's program to increase its crude oil capacity from the Southwest to the Chicago area refineries which includes the completion of looping along 164 miles of the line from Sheldon to Hayworth, Illinois. This will provide a double 12-inch line all the way from Sheldon to the Chicago area, increasing capacity from 90,000 to 110,000 barrels daily.

Two Humble Pipe Lines Are Being Reconditioned

Work has started on two major reconditioning jobs for Humble Pipe Line Company.

The Oklahoma Contracting Company is reconditioning 50 to 60 miles of Humble's lines in the East Texas division. J. R. Horrigan Construction Company, Houston contractor, is reconditioning 40 miles of 8-inch line on Humble's Kelsey Bass-Benavides system in South Texas.

Gas Stored

Oklahoma Natural Gas Company has started running natural gas to underground storage in its farm in 28-20n-12e, Osage County, northwest of Tulsa. The company has been allowed 1 billion cubic feet of gas during June and July and all natural gas not required at this time to meet customer demand will be returned to underground storage for next winter's needs. Gas being run by the company is coming from the Chickasha gas field of Grady County.

New Study on Secondary Oil Recovery Available

The second of a series of studies dealing with the possibilities of secondary oil recovery in so-called depleted oil fields of the United States, has been released by the U. S. Geological Survey. The study deals with possibilities in the Nowata-Claggett pool, Nowata County, Oklahoma, and was prepared by I. W. Fox, C. H. Thigpen, R. L. Ginter and G. P. Alden under the supervision of R. J. Reeve, of the Survey's Tulsa, Oklahoma, office.

The report consists of a detailed investigation and study of the possibilities of applying secondary-recovery methods of operation, such as air, gas, or water, to the Bartlesville sand of the Nowata-Claggett pool. It reviews the development and production history of the pool and, by interpretation of relative oil recovery and sand-body characteristics, cites areas that appear to be expedient for secondary-recovery exploitation.

Copies of the report are available upon request to the Oil and Gas Supervisor, U. S. Geological Survey, Federal Building, Tulsa.

Pemex to Continue to Hire American Drillers

Despite protests of Mexican drillers, Efrain Buenrostro, general manager of Petroleos Mexicanos, has announced the government oil monopoly's intention of continuing to hire American drillers. He defended the move because of an "insufficient supply of Mexicans trained in this speciality" and said that they were paid more because they are "better trained, are technical men with more experience." Americans get $500 monthly plus rent-free house whereas natives get about $340. Mexico's laws, Buenrostro pointed out, called for "higher salaries for workers of greater capacity."

The general manager said this policy, in effect since 1944, was "necessary to carry out the drilling of new wells." He had no information leading him to believe that serious flaws had developed in any wells drilled by Americans, this in reply to Mexicans' accusation that foreign drillers were responsible for recent loss of wells 102 and 113 in El Plan field.

Petroleum Art Exhibit

An unusual exhibit of industrial watercolor art depicting the role petroleum has played and is playing in World War II, is being shown at Philbrook Art Center, Tulsa, June 11 to July 1. The exhibit consists of 39 paintings by five distinguished artists and represents a fine arts project sponsored by the Standard Oil Company (New Jersey). The Tulsa showing was arranged through The Carter Oil Company. Handling of gasoline and fuels for aviation needs in India, the loading and unloading of LST's in the Pacific, the low tide "rolling" of oil drums in shallow water and many other "oil at war" scenes are being shown.

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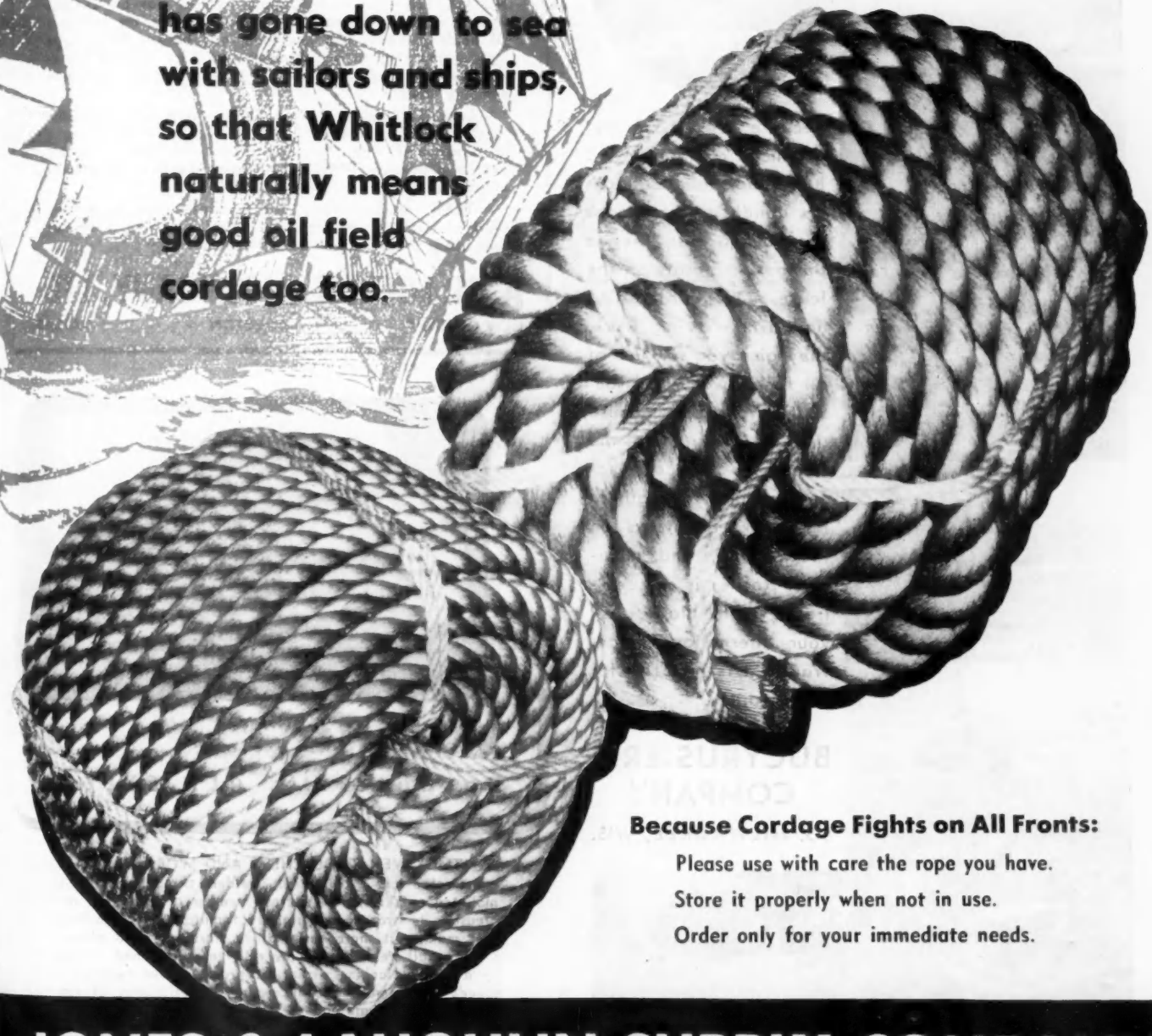

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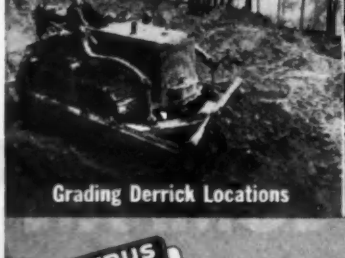
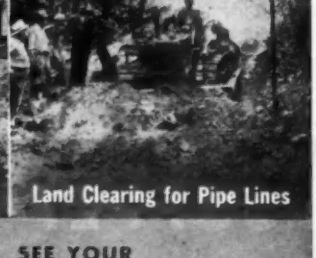

Grading Derrick Locations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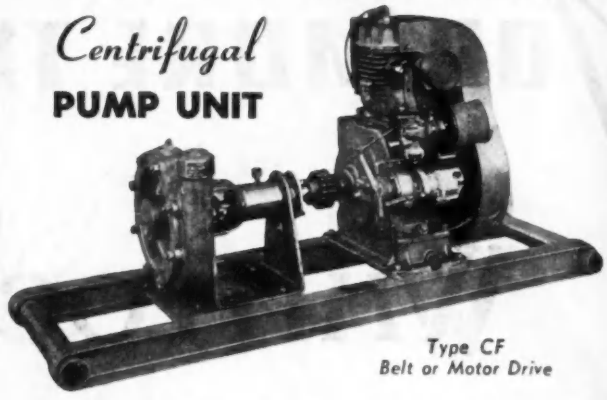

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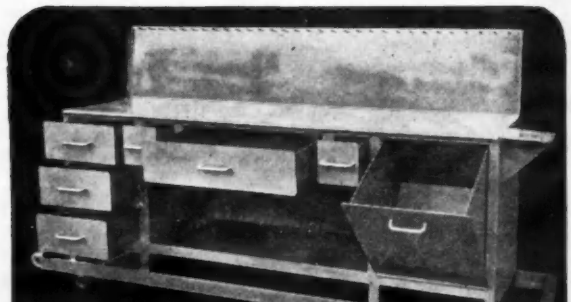

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☆ Oklahoma

Two Good Bartlesville Producers Registered

Two more good Bartlesville sand producers in South and West Moore pools; deep horizon in Erick gas sector yields big producer; Gulf's Kingfisher Hunton prospect looks good; Continental to test southeast Garvin County wildcat; Bethany well tests gas in Hunton zone.

Oklahoma County: High winds and rains which mired roads and forced many shutdowns, caused a delay in testing at Stanolind Oil & Gas Company's Bednar 1, NW NW SW 23-13n-1e, closely watched wildcat which showed gas on a drill-stem test from the Wilcox sand at 5762-64 feet. The crew drilled another foot and was preparing to take a core when a storm struck and destroyed the derrick. The test is northwest of the small Jones pool.

In the western part of the county Phillips Petroleum Company's Ella 1, CNE NE 22-12n-4w, tested wet gas in the Hunton zone, gauging more than 6 million cubic feet a day through 1-inch choke and was shut down for orders. The well was drilled to dry Wilcox sand at 7750 feet and production is from 7175-80 feet, basal Hunton. The new area is about 5 miles south of West Edmond.

Moore Area: Operators in the West and South Moore fields were rechecking electrologs in a closer study of Bartlesville sand possibilities which had been passed up last year in a number of dry Wilcox deep tests. Newest Bartlesville producer is Sinclair Prairie Oil Company et al's McDonald 1, NE NE NE 34-10n-3w, on the southwest edge of South Moore which flowed 390 barrels of oil through 1-inch choke in 4 hours. Mid-Continent Petroleum Corporation's Turk 1, former dry hole in the West Moore field, flowed 492 barrels of oil in 24 hours and the same operator was preparing to go back in Tubbs 1 to test the Bartlesville zone.

Beckham County: Skelly Oil Company et al's Baldwin 1, SE NE NE 10-9n-25w, opened a new deep pay for the Erick gas area in the Arkosic limestone phase of the lower Pennsylvanian. At total depth of 7559 feet the wildcat was perforated at various levels with last shots at 6786-6810 feet. After acidizing the well was completed for 22 million cubic feet of gas daily.

Kingfisher County: Near Reading and 4½ miles northwest of nearest production at West Edmond, Gulf Oil Corporation set pipe and was preparing to test a show in Hunton lime at Triplett 1, CNE SW 8-15n-5w. Hunton was topped at 7386 feet and cores from 7403-11 feet recovered oil-stained lime with good odor and strong gas bubbles. The well cut about 350 feet of Mississippian lime or about 140 feet more than in the West Edmond field.

Cleveland County: On a drill-stem test The Carter Oil Company's Turner 1, CSW NW 26-10n-3w, recovered 96 barrels of oil, 15 barrels of salt water and 8 barrels of drilling mud with tool open 2 hours. Gas estimated at 500,000 cubic feet a day showed in 50 minutes. The play is between the Moore and West Moore pools with the well bottomed at 8940 feet and the show logged between 1814 feet and the bottom of the hole.

Garvin County: A new oil field in the Butterly area of southeast Garvin County loomed at Continental Oil Company's Butterly 1, wildcat in the NW SW SE 14-1n-1e, where operator was rigging for a test after setting production string to 4226 feet. The well topped Arbuckle lime at 4164 feet and cored from 4215-26 feet, recovering dolomitic lime saturated with a light oil. A drill-stem test at 4176-4226 feet recovered 65 feet of oil-stained mud in 50 minutes. A sand at 3875-4077 feet showed 1720 feet of heavy, black oil. The well is south of Wynnewood, site of an asphalt plant, and attempts will be made to develop the shallow horizon, as the oil appears suitable for processing at the plant.

Washita County: The Texas Company plans a 10,000-foot test northwest of Port and was moving in and rigging up at Wolfe 1, SW SW 20-9n-20w. Only production in the county is the West Sentinel pool discovered last year. The wildcat is on a northwest-southeast trend along which many important Oklahoma pools have been found.

Payne County: J. E. Crosbie, Inc., was preparing to drill at Bryant 1, CSE SE 6-18n-5e, wildcat near the Norfolk pool. First Wilcox sand was topped at 3608 feet and second Wilcox at 3639 feet. A core from 3600-11 feet recovered sandy, spotted lime, and another core from 3611-27 feet showed a continuance of the formation. A drill-stem test from 3584-3631 feet recovered 90 feet of gas-cut mud.

Vacuum Use Banned

The use of vacuum in the West Hewitt Smith Sand pool at the well head has been prohibited by Oklahoma conservation authorities provided that the use shall be reduced at least two points per week until such time as vacuum is entirely eliminated. Gasoline plants will be permitted to apply a small amount of vacuum to the lines provided such application is not reflected at the well head. There are 40 producing wells in the pool, which is located in Carter County and the use of vacuum to increase production has been applied for about two and one-half years.

Wells Completed in the United States in Week Ended June 16, 1945

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS: *Oil	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative: This Year	Last Year
Alabama	2				2						2	1	13	12
Arizona														3
Arkansas	11			1	12						12	1	81	89
California	35	1		3	39				10	10	49	52	981	892
Colorado	1				1						1		12	10
Florida													8	1
Georgia												1	4	1
Illinois	8			11	19	6	2		5	7	32	31	745	742
Indiana	2			2	4						4	4	128	126
Iowa													1	2
Kansas	16			7	23	1	1	1	14	16	40	27	701	775
Kentucky	4			2	6				1	1	7	8	182	305
Louisiana	9	1		4	14		2	1	3	6	20	21	436	321
North Louisiana	5	1		3	9			1	1	2	11	4	141	105
South Louisiana	4			1	5		2		2	4	9	17	295	216
Michigan	4			7	11				3	3	14	18	345	269
Mississippi	2			4	6				2	2	8	11	177	56
Missouri													15	11
Montana	6	1		1	8						8	3	84	135
Nebraska													2	7
New Mexico	7				7						7	11	212	189
New York	15		10		25						25	25	486	564
Ohio	4	3		3	10						10	8	301	378
Oklahoma	26		1	13	40				7	7	47	42	1,045	744
Pennsylvania	17	5	15	2	39						39	44	1,250	1,273
Tennessee													1	6
Texas	80	10	1	32	123	5	6		28	34	162	132	3,295	2,613
E.Tex.Bor. Co.'s													33	8
E. Texas Field														3
Rest of E. Texas	9	1		2	12				4	4	16	3	106	133
North Texas	14		1	19	34	1	1		5	6	41	30	741	607
W. Central Tex	5			2	7		1		2	3	10	15	214	179
West Texas	20			1	21	4	3		1	4	29	38	861	707
Tex. Panhandle	2	8		1	11						11	4	262	101
G. Coast, Upper	4			2	6				6	6	12	16	328	240
G. Coast, Lower	20	1		2	23		1		7	8	31	13	476	396
Southwest Texas	5			3	8				1	1	9	10	230	196
S. Central Tex.	1				1				2	2	3	3	44	43
West Virginia	1	10		2	13						13	16	343	414
Wyoming	2				2						2	1	63	70
Total U. S.	252	31	27	94	404	12	11	2	73	86	502	457	10,911	10,008

* Includes distillate wells. † Includes salt water disposal wells.

☆ Kansas

Reworked Chitwood Failure Results in Big Producer

Reworked "dry hole" in the Chitwood pool results in big producer; lease, royalty buying heavy in southern Sumner County as Carter discovery goes on pump; new horizon pays off in Seacat pool; Atlantic sets pipe for test west of Nunn area; wildcatting brisk with 14 tests staked in virgin areas.

Pratt County: Abandoned more than a year ago, Lion Oil Refining Company's Chitwood 1, SW SE SE 15-28s-12w, in the Chitwood pool, has been reworked and completed with a flow of 45 barrels of clean oil on a 3-hour test. Shut in for 8 hours, the well flowed at the rate of a barrel of oil a minute. The well had been drilled to dry Arbuckle lime at 4620 feet, total depth. Operator decided to try for production opposite the Viola, which was perforated and successfully tested at 4362-74 feet.

Sumner County: The Carter Oil Company's Latimer 1, CNW NE 12-33s-2w, which awaits state potential test, has set off a heavy lease and royalty play with royalty reported selling at $150 an acre. The well revives interest at the northern sector of the Nemaha Ridge. No time is being lost in developing the new sector with Carter rigging up at Webber 1, CNE SW 26-31s-4w; Keener Oil Company of Tulsa moving in for an Arbuckle lime test in NW SE 7-34s-2w, and Deep Rock Oil Corporation acquiring 7 blocks in the southern part of the county with first location staked in NWC 29-34s-4w. C. W. Brackensick of St. Louis, acquired the Dave Alter block in township 30s-1w, and has staked location in SE SW 28-30s-1w.

Cowley County: Deep Rock Oil Corporation opened a new horizon in the new Seacat pool at Seacat 1, NW NE NW 26-33s-4e, completed as a 10-barrel daily pumper from Layton sand between 3103-08 feet, with total depth at 3113 feet. The field has been producing from the Mississippi lime only.

Finney County: Two miles west of the Nunn pool, The Atlantic Refining Company set pipe at 4628 feet in Wright 1, SE NW NW 33-21s-34w, and was moving in cable tool to drill in and test an oil show in the Mississippi lime zone at 4607-21 feet. If the test fails operator plans to test the Krider-Herrington zones between 2528-2765 feet which showed for ½ million cubic feet of gas daily on a drill-stem test.

Harper County: Lion Oil Refining Company continues efforts to establish first commercial production for Harper County at Muir 1, SEC 10-31s-8w. With Mississippi lime checking about 40 higher than normal, tests have recovered various amounts of oil with water from 4400-10 feet. Initial test resulted in a fill up of 1000 feet of oil and a like amount of water. After swabbing, the water was exhausted and the hole filled with 2700 feet of oil.

Wildcatting was brisk in Kansas with 14 tests reported, 4 in Barton County, 2 each in Ellis, Stafford and Rooks counties, and the balance in Edwards, Trego, Cowley and Sumner counties.

Nebraska

Amerada Petroleum Corporation abandoned State of Nebraska 1, SE NE SE 16-33n-39w, wildcat in Dawes County, at 4494 feet, total depth, in granite. The well was started in April. Two drill-stem tests at 4432-94 and 4050-60 feet recovered salt water. Operator is reported moving into South Dakota for a test in CNW NE 26-36n-48w, Shannon County, about 18 miles north of the dry hole in Nebraska.

Missouri

Claude McQueen's Meyers 1, CSE NE SW 13-63n-41w, near Corning, Atchison County, was fishing while drilling with a light portable rotary at total depth of 1330 feet, after a twistoff at about 600 feet. Dan Short's Rankin 1, SE SE SE 9-65n-40w, two miles northwest of Tarkio, was fishing at 318 feet.

Platte County: Fell & Reid's Klam 1, SE SE SE 19-51n-33w, northeast of Parkville, was plugging back for a test. Total depth was 1750 feet with Arbuckle topped at 1714 feet and small gas shows reported up the hole.

☆ New Mexico

Skelly Field Permian Oil Zone Receives Extension

Regular Permian oil zone in Skelly field extended by projected deep test; Ordovician test in Penrose field nearing base of Permian without indicating production below regular pay.

Lea County: Skelly Oil Company's Johnson 2, C NE NE 20-23s-73e, a mile south of a 7200-foot failure and scheduled 6500-foot test, widened the regular Permian area ¾ mile northeast in flowing 30 barrels of oil hourly through drill pipe from sandy-lime at 3585-3676 feet. Pipe likely will be set for completion in view of performance of this outpost.

Penrose et al's Federal-Penrose 1, Ordovician test for the Penrose field, was drilling dry dolomite at 7065 feet without shows since passing up possible gas at 5093-5173 feet.

Deep Wildcats: Stanolind Oil & Gas Company's Jones 1, 3 miles southeast of Hobbs field, was drilling lime at 9945 feet in Montoya, topped at 9730 feet. The Texas Company's Eavee 1, 11 miles northeast of the Hobbs field, was drilling gray lime at 8599 feet. Phillips Petroleum Company's State-Lea-Mex 4, Maljamar area, was drilling at 12,650 feet.

Kansas Hearing Set

Kansas State Corporation has set June 22 as the date for considering market demands and to fix the state and pool allowables for July. Hearing is scheduled for 10 a.m. in Wichita.

Injection Approved

To eliminate pollution of surface and streams in the area of the West Edmond pool and as a means to greater oil recovery, the Oklahoma Corporation Commission has authorized the West Edmond Salt Water Disposal Association to dispose of salt water from producing wells by injection into the Hoover and Tonkawa sands which are non-productive in the field.

☆ West Texas

Major Devonian Extension Is Pending in TXL Field

Major extension pending for the Devonian horizon in the TXL field; Crane County deep prospect improves in outlook; majority of 6 wildcat starts for past week will drill below 5500 feet.

Ector County: Sinclair Prairie Oil Company's Williamson 1, C SE SW T&P Ry. 40, Block 45, T-1-N, and 2¾ miles north by west of nearest Devonian producer in the TXL field, recovered a small amount of sweet gas and 480 feet of gas-cut mud on a drill-stem test at 7855-7940 feet in Devonian, topped at 7883 feet. A second drill-stem test was underway at 8029 feet. This outpost is flat with nearest Devonian well, but is 27 feet low to the field's Ellenburger discovery situated 2⅜ miles south by east. In view of its favorable structural position it may be carried to the more productive Ellenburger, which has been proved for 2¼ miles along northwest-southeast trend, but confined to the apex of the structure.

Cities Service Oil Company and Shell Oil Company's T. P. Land Trust 1-C, C SE NE T&P 7, Block 46, and 1⅛ miles southwest of the discovery, was abandoned at 8280 feet in Devonian, topped at 8205 feet, or 336 feet low. Mississippian, entered at 8075 feet, was incorrectly called top of the Devonian. This is the second failure for the southwest flank of the structure.

Crane County: The Atlantic Refining Company's University 1-A, 5⅓ miles west of the McElroy field, was drilling at 8690 feet after apparently establishing the water level in the Devonian oil zone. A drill-stem test at 8564-8650 feet yielded a volume of gas rated at 2 to 3 million cubic feet daily with a spray of oil, but a break-down of drill pipe yielded 1980 feet of oil and 30 feet of salty-sulphur water. This wildcat entered the Devonian at 7890 feet, or 284 feet high to a 10,659-foot Ellenburger failure 2 miles northeast, and indicated production at 7913-8024 feet, 8380-8454 feet and 8510-66 feet.

Gulf Oil Corporation's McKnight 7-E, McKnight sector of the Sand Hills structure and 3 miles northwest of nearest Ellenburger production, flowed 51 barrels of oil and 120 barrels of water during 3⅔ hours, with gas volume rated at 1,100,000 feet daily. This production is from Ellenburger perforations at 6060-75 feet.

Andrews County: Sinclair Prairie Oil Company's University 2-146, Devonian project for the east side of the Fullerton field and 4 miles northeast of nearest Devonian production, was drilling Permian lime at 8310 feet. This is an important test, as previous Devonian explorations have been restricted to the west side of the structure.

Gulf Oil Corporation has contracted to start an Ellenburger test in acquiring half interest in Hunt Oil Company's 5-section M. A. Thornberry lease in Block A-42, Public School Lands, and northwest of the Mascho field. It is reported that Gulf traded 1800 acres in Mississippi as part consideration.

Humble Oil & Refining Company's Means 88-X, Ordovician test for the

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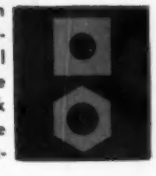

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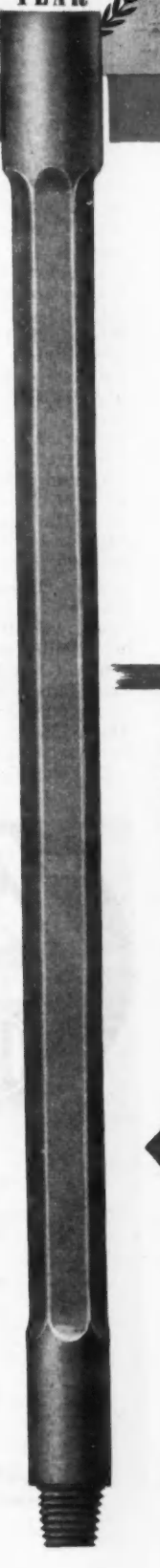

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*These figures are based on the widely-used 6" square kelly with 3½" bore vs the 6⅝" hexagon kelly with 4½" bore. Because it is the maximum dimension that governs the selection of a kelly size, the 6⅝" hexagonal (across-corner dimension 7¾") is actually ⅛" smaller in its limiting dimension than the 6" square kelly (across-corner dimension 7⅞"). In other comparable sizes, hex kellys offer proportionate advantages.

Means field, was drilling dry lime at 11,380 feet without shows below the regular Permian. Shell Oil Company and The Texas Company's Ratliff 1, 5 miles west by north of the Three-Bar pool, and indicated oil producer from 3 upper horizons, was drilling Upper Ordovician at 10,815 feet.

Hockley County: The Texas Company's Coble 1-A, 2¼ miles west of its Levelland pool discovery, pumped 97 barrels of oil and 30 barrels of water on completion gauge after using 14,000 gallons of acid in San Andres broken pay at 4770-4860 feet. The company has 2 intermediate tests in process of completion.

Crockett County: Amerada Petroleum Corporation et al's Todd 8-A, fourth Ellenburger well for the Todd field, flowed 2024 barrels of 41.6-gravity oil, gas-oil ratio 535-1, initial after using 4000 gallons of acid through perforations at 6120-94 feet. Francis A. Callery et al's Shannon 2, ¼-mile north extension, was preparing to complete at 6115 feet with 7-inch casing at 6040 feet. Ellenburger was entered at 5900 feet with first pay at 5930 feet and lower pay at 6080 feet. It is the highest structural position to date, and the Crinoidal was absent, while only 95 feet of Crinoidal was logged.

Tom Green County: The Texas Company's Edwards 1, ¼ mile southeast of Wall, was drilling dolomite at 5800 feet in Ellenburger, topped at 5295 feet, or 276 feet low to its failure 5 miles northeast. This wildcat logged nominal porosity at 5015-35 feet and good porosity at 5055-5125 feet in Basal Pennsylvanian, but tested sulphur water.

Cochran County: Stanolind Oil & Gas Company's Edwards 1, 10½ miles west of the Hudson extension sector of the Slaughter field, was idle for repairs after plugging back from 5111 to 5085½ feet because of bottom-hole water. A commercial pumper is assured from previous tests, with top of San Andres pay at 5025 feet.

Winkler County: Richardson & Bass, Inc.'s Kansas City Co. 1, 2¼ miles southeast of the Keystone-Ellenburger area, tested a small amount of gas with 8694 feet of sulphur water between casing seat at 10,640 feet and total depth at 10,673 feet in Ellenburger, topped at 10,570 feet, or 1440 feet low. This showing was anticipated, while pipe was set primarily to test the Silurian and Basal Permian.

Gaines County: Humble's Eubanks-Humble 1-B, PSL 6, Block AX, 2⅝ miles northwest of its Doss pool discovery, was drilling dry lime at 7350 feet, having recovered 650 feet of gas-cut mud when tester was used at 7037-7218 feet.

Amerada's Jones 1-A, indicated prolific oil discovery from Lower Permian, was drilling lime and shale at 10,222 feet on Ellenburger objective.

173 Tests Approved

Permission to drill 173 new wells in Texas was granted by the Railroad Commission last week. The list included 44 wells in West Texas, 33 in North Texas, and 33 in Southwest Texas.

There were 25 locations in the Gulf Coast, 19 in West Central Texas, 13 in the Panhandle and 6 in East Central Texas.

☆ Texas Panhandle

Deep Wildcat Planned in Anadarko Basin Sector

The Anadarko Basin sector of the Texas Panhandle has been assigned a wildcat to be drilled by Olney F. Flynn, Tulsa, and associates on the Hoover-Patten 160-acre tract, SW SW NE H&TC Ry. 213, Block 43. The projected 6500-foot test is supported by a 24,000-acre block.

Dallam County: The Texas Company's Capitol Freehold Land Trust 1, 9 miles south of Texline and a scheduled 7000-foot wildcat, was drilling at 3615 feet. Shamrock Oil & Gas Corporation's Chester 1, NW NW SE T&NO Ry. 355, Block I-T, has rigged up for a Permian test, primarily seeking gas.

Wheeler County: Sinclair Prairie Oil Company's Mills 1, C NE NE H&GN Ry. 18, Block A-7, projected 8500-foot Ellenburger test on a 27,000-acre block, was drilling anhydrite at 3955 feet.

Bailey County: El Paso Natural Gas Company's West Texas Mortgage & Loan Company 1, Sect. 55, Block A, M.B.&B. Survey, was awaiting orders in granite at 9104 feet.

Michigan Hearing Reset

P. J. Hoffmaster, director of the Michigan Department of Conservation, has changed the date of a public oil hearing in Lansing from June 25 to June 28 to avoid conflicts with previously scheduled meetings.

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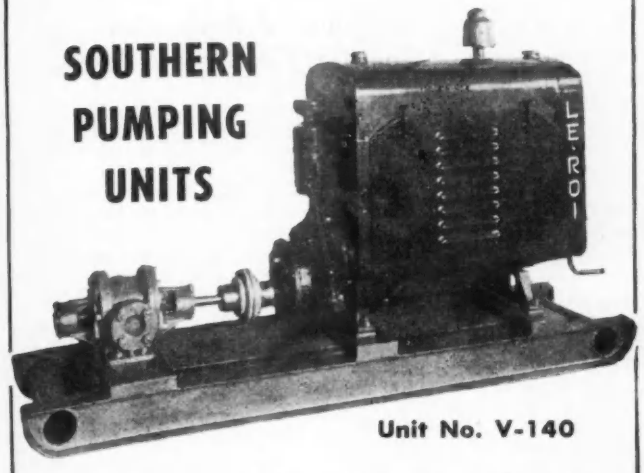

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☆ North Texas

Strawn Horizon of Madden Pool Is Expanded West

Strawn horizon in Madden pool, Wichita County, expanded to west; Sivells Bend outpost passes up Strawn production to explore Ellenburger; shallow oil zone uncovered in Kinder area, Jack County.

Wichita County: Panhandle Refining Company's Boone 1, SEC of J. Tyler survey, is the third and probably the best Strawn well in the Madden pool, having recovered 100 feet of free oil and 145 feet of oil-cut mud from sand at 4210-40 feet. Pipe was set at 4205 feet to complete.

Cooke County: Sun Oil Company's Fields 1, 1¾ miles south of the Sivells Bend field, enhanced its outlook for Strawn production in testing 60 feet of oil-cut mud and 570 feet of high-gravity oil without water from sands at 6390-6408 and 6429-35 feet. It is credited with checking about 175 feet high, and is contracted to 9500 feet, or water in the Ellenburger.

The Texas Company's Bulkeley 1, 2⅛ miles east of the Walnut Bend field and a failure in the Ellenburger at 7620-7800 feet, was testing Basal Strawn perforations at 6436-51 feet, having cemented 7-inch casing at 6500 feet. The company's Ramsey 1, B. Lusk Survey and 2½ miles west by north of Marysville, tested dry at 2509-2636 feet in Ellenburger, topped at 2445 feet with elevation of 876 feet. Electrical formation survery will be run.

Jack County: T. D. Humphrey and L. C. Harper's Kinder 3, NW SW TE&L Co. Sec. 2268 and twin to Marble Falls producer in the Kinder pool, headed 33 barrels of oil in 1 hour after drilling 18 inches of oil sand to 2120 feet. Pipe has been set to complete with spudder. The presence of this sand was noted in drilling Kinder 2, which was completed flowing 25 barrels of 41-gravity oil daily after acidizing Marble Falls perforations at 4170-94 feet.

Continental Oil Company's Evans 1, west offset to its Risch pool discovery, set pipe to complete at 4500 feet in Bend, topped at 4317 feet, or 21 feet low. A drill-stem test at 4360-4430 feet yielded 1700 feet of oil-cut mud to indicate commercial producer. The company's Hooten 1, southeast offset to the discovery, entered the Bend at 4298 feet, or 11 feet high, and completed as a gasser.

Continental Oil Company and Sinclair Prairie Oil Company's Cherryhomes 1, John Irvin Survey and 1½ miles north of Cundiff, entered the Ellenburger at 6606 feet with oil stain and odor to 6642 feet, where a drill-stem test was pending.

☆ East Texas

Cherokee County Wildcat Has Show in Woodbine

Cherokee County wildcat has gas show in top of Woodbine; 2 Smackover lime projects in Smith County may have record thickness of Travis Peak.

Cherokee County: Tom G. Shaw et al's Bolton-Pure 1, Chas. Widgeon Survey and 3½ miles southwest of Summerfield, logged Austin Chalk-Woodbine contact at 4165 feet, and a 2-foot core pulled at 4171 feet carried oil stain and gas odor in porous gray sand. Operations were temporarily halted due to flood waters. This wildcat is near previous tests that offered some encouragement for Woodbine production.

Humble Oil & Refining Company's Maness 1, Jose M. Musquez Survey and projected Travis Peak test for eastern Cherokee County, logged first anhydrite at 7558-feet, and was drilling at 7690 feet.

G. L. Walker et al, successor to Wm. H. Foster et al, are preparing to test Bowling-Pure 1, Travis Peak failure at 8370 feet near the Lone Star pool, after setting pipe and plugging back to 3640 feet. Perforations will be made opposite Nacatoch sand, carrying oil saturation at 3350-60 feet.

Smith County: Sinclair Prairie Oil Company's Shofner 1, Smackover project for the Chapel Hill field, was drilling at 9971 feet, having logged 1896 feet of barren Travis Peak. Phillips Petroleum Company's Englander 1, 3½ miles south by west of its South Tyler field discovery, was drilling near the 12,500-foot level with about 2100 feet of Travis Peak section.

Delta Drilling Company's Christian-Arkansas 1, Wm. Keys Survey and northeast outpost for the Sand Flat field, cemented pipe after drilling through the Paluxy oil sand at 7172 feet. Effective oil saturation was logged at 7030-58 feet, with top of Paluxy called at 7005 feet.

Harrison County: Rogers Lacy in a 45-minute drill-stem test of the Travis Peak horizon in J. R. Tuttle et al 1, J. M. Clifton survey, prospective discovery 3 miles north of Marshall, obtained a show of gas and salt water. Perforations were squeezed in preparation for further perforating higher up the hole. Though the well is drilling tight, there are reports that 32 feet of porosity were logged in the Pettit where the likeliest production possibilities exist. Total depth is around 6900 feet.

Lacy is building roads and clearing location for B. C. Quinn 1, Vashti Gibbs survey, a proposed Travis Peak wildcat, 1 mile west of Harleton townsite. D. R. and R. J. Whelan are erecting tanks for the testing of William Peal Estate 1, Betty Humphries survey, 2½ miles northwest of Harleton, which has been shut down several weeks after setting 5½-inch casing at 7748 feet, total depth 7862 feet.

Panola County: Steady development of the great Carthage field continues. Fourteen wells are either testing or in a semi-completed stage, 11 wells actually making hole and 7 locations ready to begin work. Four new locations were announced during the past week: 1 for Arkansas-Louisiana Gas Company, 2 by Ann Lacy Lillard and Patsy Lacy Griffith, and 1 by J. I. Roberts and C. H. Murphy, Jr.

Shelby County: Hunt Oil Company's G. F. Bright 1, J. English survey, cored at 6325-46 feet and recovered cores with gas odor and bleeding oil. Later cores revealed non-porous lime with gas odor and limey shale.

Humble Oil & Refining Company is drilling below 9013 feet in hard sand in Pickering Lumber Company 1, S. Francois survey.

☆ South Central Texas

Bastrop and Williamson Counties Get New Wildcats

General Crude spudding new wildcat test in Bastrop County; locations staked for 2 wildcats in Williamson County; Kimble County test in Ellenburger.

Bastrop County: General Crude Oil Company was preparing to spud Addie M. Powell 1, 3500-foot wildcat test 3½ miles northwest of Bastrop.

Williamson County: Locations for 2 new wildcat tests have been staked. R. C. Clark of Taylor, Texas, spotted F. Eiben 1, W. M. Lancy survey, 12 miles southwest of Taylor. The test is projected to 1500 feet.

About 2 miles southwest of the Taylor city limits, H. M. Snowden of Dallas will drill Annie Killdorf et al 1 in the G. M. Reese survey. This test also is projected to 1500 feet.

Kimble County: Texas & Pacific Coal & Oil Company's Muss 1, wildcat test in the northwest part of the county, is drilling below 4560 feet after topping Ellenburger at 3840 feet.

Drake Memorial Funds

Pennsylvania has appropriated $40,000 to the Pennsylvania Historical Commission to be used for the Drake Well Memorial Park, at Titusville. The money will be spent in obtaining detailed architectural and engineering plans for the further development of the park and museum, completing the erection of the Drake well replica, in making the necessary repairs and replacements to the property, and in purchasing certain historical materials relating to the Drake Well and early petroleum history.

☆ Southwest Texas

Duval County Wildcat Activity Takes Spurt

Wildcat drilling activity soars in Duval County; test near Benavides sets casing for completion attempt; McMullen County wildcat test staked; Jim Hogg County wildcat test reports oil sand cored.

Duval County: Oil Development in this area soared when 1 wildcat set casing for a test and locations for several other wildcat tests were staked.

Cox & Hamon and Santa Clara Oil Company's Clara Driscoll 3, wildcat 13 miles northwest of Benavides, topped sand at 3157 feet. A drill-stem test at 3162-66 feet developed 600 pounds working pressure on a ¼-inch choke and operators set casing at 3218 feet for a completion attempt.

Glenda Oil Company of Alice located a 3000-foot wildcat test 24 miles west of Benavides. It is the Leila C. Peters 1-A in Survey 397.

H. J. Porter of Houston will drill Jesus V. Ruiz 1-B, 4250-foot wildcat test, 12 miles west of San Diego in the AB&M Survey.

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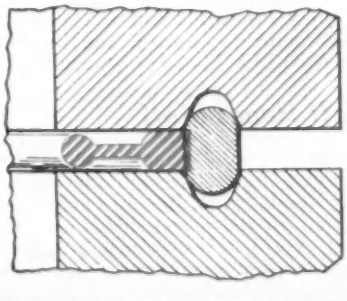

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Republic Natural Gas Company staked C. K. Gravis 1 in Survey 254.

McMullen County: A 7000-foot wildcat test will be drilled 3 miles southeast of Fowlerton by Quintana Petroleum Corporation. The test is the Ethel Lowe Craig 1 in the J. Poitevent Sect. 17.

Jim Hogg County: Dulup Oil Company has located a 2500-foot wildcat test 10 miles south of Petroleum. It is the San Juan Ramirez et al 1 in Survey 271.

Interest in this area also is focused on Bridwell Oil Company's Isabel R. de Gutierrez 1, wildcat test 12 miles southwest of Hebbronville. Sand showing oil was reported cored at 3259-69 feet but the test is drilling deeper after 2 drill-stem tests recovered only mud.

Starr County: On a 24-hour potential test, W. D. Kennard's A. M. Kelsey 3, Ross field, pumped 55 barrels of 22.6-gravity oil from 2264-78 feet.

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☆ Lower Texas Coast

New Sand Is Opened in Kleberg County Field

New sand opened in Ricardo field; final completion made on Brooks County wildcat discovery; Boyce discovery well still testing; second well completed in Willmann field.

Kleberg County: A new sand for the Ricardo field is seen in the Tide Water Associated Oil Company's H. C. Porter 1, southwest of the discovery well. The new sand opener drilled to 8341 feet and set 5½-inch casing at 7094 feet. Operator plugged back to 6341 feet and perforated at 6320-22 feet and on a 12-hour drill-stem test through ½-inch and ⅛-inch chokes flowed at the rate of 146 barrels of 39.2-gravity oil daily. Working pressure was 1030 pounds and gas-oil ratio 745/1. The discovery well was completed through perforations at 7266-68 feet.

Brooks County: Final completion has been made on The Texas Company's Mary M. Lasater 3, gas-condensate discovery well 5 miles southeast of Falfurrias. Perforated at 6656-60 feet, the well gauged 28 barrels of fluid daily, 28 percent salt water and 72 percent condensate. Tubing pressure was 2325 pounds with the gas-oil ratio being 72,000 to 1.

Goliad County: Magnolia Petroleum Company's W. W. Boyce 1, wildcat discovery well of the Boyce field, is still testing. On a 9-minute drill-stem test at 7485-90 feet the well flowed in 4 minutes through a ¼-inch choke with a working pressure of 2475 pounds. The recovery was 90 feet of distillate. Operator then perforated at 7470-85 feet and the well now has a shut-in tubing and casing pressure of 2700 pounds.

Bee County: Navarro Oil Company's F. A. Dahl 1, ¾ mile south of the Burnell field, is still testing. On open flow through perforations at 6985-93 feet, the well made 14,250,000 cubic feet of gas daily. Pressure was 2500 pounds.

San Patricio County: A second well has been completed in the recently opened Willmann field. Bridwell Oil Company's Hertha Willmann 1-A flowed 132 barrels of 22.5-gravity oil daily through a ⅛-inch choke from perforations at 4554-57 feet. Tubing pressure was 750 pounds and casing pressure 1600 pounds.

Moves Cycling Plant

Gasoline Production Corporation is dismantling its 60,000,000-foot daily capacity recycling plant in the Grapeland field, Houston County sector of the East Texas district, and will utilize the equipment in establishing a plant near Beeville, Texas. The plant began operating in the Grapeland field in August, 1940, manufacturing gasoline and gas oil from the 6000-foot Woodbine sand.

Slaff Heads Staff

The Federal Power Commission is assembling its staff to conduct its natural gas investigation, having named as chief council for the investigation staff George Slaff, who has just returned to the commission after several years overseas duty with the American Red Cross. He formerly was on the legal staff of FPC.

☆ Upper Texas Coast

Hockley Flank Tests Cores Deeper After Oil Recovery

Hockley flank test cores deeper after recovering oil on drill-stem test; flank test at Pierce Junction recovers water; Humble to drill deep Wilcox test at New Caney; McCarthy completes 2 oilers at Fannett.

Harris County: Magnolia Petroleum Company's Warren Ranch 2, wildcat test on the southwest flank of the old Hockley salt dome, is holding interest following a drill-stem test at 5684-5731 feet which recovered 2400 feet of 36-gravity oil with a bottomhole pressure of 1000 pounds. However, the pressure dropped off at the end of an 8-hour period. The test now is coring below 6263 feet.

Gulf Oil Corporation's C. S. Settegast 1, deep test on the west side of the Pierce Junction dome, is squeezing perforations at 9810-30 feet after recovering salt water. Previous tests at 10,510-530 feet and 10,064-076 feet also recovered salt water.

Montgomery County: Location for a 12,000-foot Wilcox sand wildcat test has been staked by Humble Oil & Refining Company in the New Caney area. It is the May Ovalline et vir 1 in the Thomas Ives Survey.

Liberty County: General Crude Oil Company's attempt to extend the South Esperson field westward failed with the abandonment of its Esperson-Sun Fee 18-B at 6962 feet.

Jefferson County: Glenn H. McCarthy has completed 2 new oilers in the Southeast Fannet area. The Mary Weed Fletcher 1 flowed 249 barrels of 34.9-gravity oil daily through a 9/64-inch choke from 7218-22 feet. The Craigen et al 1 made 201 barrels of 35.9-gravity oil daily through a 9/64-inch choke from perforations at 7325-30 feet and 7334-37 feet.

Galveston County: John W. Mecom of Houston has staked a 7500-foot test on the southwest side of the old High Island dome. It is the E. K. Cade 1 in the W. M. Hudson survey.

Chambers County: E. R. Brann et al have located a 9000-foot wildcat test 10 miles south of Anahuac. It is the P. J. Barrow 1 in the J. S. Roberts survey.

Hardin County: Humble Oil & Refining Company has entered the Village Mills field by staking its Southwestern Lumber Company 1 in the Hardin School Land Survey. This test is an east offset to Houston and American Republics' 2 Hardin-Fee, discovery well.

Humble Announces Changes In Production Department

Humble Oil & Refining Company, Houston, has made the following changes in supervisory forces in the production department:

L. E. Odom, district chief clerk, Lovell Lake District, Beaumont, Texas, has been appointed an assistant division chief clerk for the Gulf Coast Division, Houston.

J. C. Martin, district chief clerk, has been transferred from the Galveston Bay District, Dickinson, Texas, to the Lovell Lake District, Beaumont.

T. N. Barber has been transferred

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Penn Groups Meet

Directors of Pennsylvania Grade Crude Oil Association will meet Thursday morning, June 28, at Bradford Pennsylvania. Members will also take part in the annual meeting of the Bradford District Pennsylvania Oil Producers' Association scheduled the same day when J. P. Jones, director of production, and R. V. Hughes, director of production research, will give reports.

☆ South Louisiana

Production Opened on Flank of Edgerly Dome

Oil production opened on south flank of Edgerly dome; Shell plans second test near world's deepest producer; Yegua Corporation testing wildcat well in St. Martin Parish; Wilcox sand wildcat test staked in Rapides Parish.

Calcasieu Parish: Gulf Refining Company has opened oil production on the south flank of the Edgerly dome with completion of its Louisiana Sulphur Mining Company 1-A, 33-9s-11w. Drilled to 9520 feet, operator set 5½-inch casing at 9398 feet and perforated at 9325-50 feet. The company reported a flow of 557 barrels of oil daily through a ⅛-inch choke with a tubing pressure of 4700 pounds, which is considered a record flow through this size choke.

Iberia Parish: Shell Oil Company has located a second test in the Week's Island field, site of the world's deepest producer. The new test is the Smith-State 2 in 13-14s-6e. The first test on the lease was recently completed through perforations at 13,505-520 feet as the deepest oil producer in the world.

Rapides Parish: Another attempt will be made to establish Wilcox sand production in this area. Louisiana Land & Exploration Company has spotted its J. A. Bentley 1-C, Tract 2, in 25-4n-5w. Several wells have tested the Wilcox sand in this area but none has made a commercial producer.

St. Martin Parish: A production test is being made at Yegua Corporation's Olivier & Burdin 1, 48-7s-6e, wildcat in the East Arnaudville area. Drilled to 10,924 feet, operator set 5½-inch casing at 10,562 feet and perforations have been made at 10,488-498 feet for initial completion attempt.

Lafourche Parish: Humble Oil & Refining Company is completing a new producer in the Delta Farms field. The company's I. R. Price 5 perforated 5½-inch casing at 9420-26 feet and the well is flowing 12 barrels of oil an hour through a ¼-inch casing. Tubing pressure is 300 pounds with gas-oil ratio 560-1.

Jefferson Parish: The Texas Company's State-Barataria Bay 1, wildcat test in the East Barataria Bay area, was being delayed with stuck drill pipe at total depth of 12,319 feet. Operator had set 7-inch casing at 12,000 feet.

St. John the Baptist Parish: A new 12,000-foot test has been projected in the Reserve area. It is The Atlantic Refining Company's Lutcher-Moore Lumber Company in 32-10s-6e.

☆ North Louisiana

Benton Wildcat Testing Diminished Volume of Gas

Benton area wildcat continues testing diminished volume of gas; new work slightly retarded in North Louisiana.

Bossier Parish: J. R. Hayden, Trustee is testing at Ellerbee 1, 3-20n-13w, 3 miles from the Benton discovery to the northwest, and has decided to continue to produce. Volume of gas has dropped to 300,000 cubic feet per day, with some distillate and salt water through perforations from the Cotton Valley "D" sand at 8036-42 feet. Total depth of well is 9016 feet.

Barnsdall Oil Company and Sohio Petroleum Company drilled to 9100 feet and are correlating electrical survey in Welori Lumber Company 1, C SE NW 20-20n-12w, 1½ miles southeast of the Benton field. Seven-inch casing will be run to 8525 feet for testing, though the well is lower on structure than the discovery.

Claiborne Parish: Blackwell Oil & Gas Company is drilling below 8997 feet in the Cotton Valley in Waller-Beene 1, C NW SE 10-23n-8w, deep test in the Haynesville field. A core from 8988-94 feet recovered sand with oil odor, and a drill-stem test recovered 20 feet of mud with showing of oil and no salt water. The well is reported considerably lower on structure than other Cotton Valley producers.

Webster Parish: Hunt Oil Company reacidized through perforations at 5734-44 feet opposite the Pettit lime in Mrs. O. G. Roberts 1, 11-23n-10w, new discovery well, which had been shut in several days but failed to build up sufficient pressure to flow. Before being shut in, the well was swabbed for 15 barrels of oil per hour with 30 percent wash water and no recovery of salt water. Previous acidization with 6000 gallons obtained a flow of 100 barrels of fluid per hour before the well was killed by salt water encroachment.

Concordia Parish: The California Company and The Carter Oil Company are running 7-inch casing at 10,430 feet in L. R. Alwood et al 1, 11-9n-10e, Lake St. John field, which is reported to have cored sand with shows of oil and gas at 10,245-65 feet, and which probably will be tested before the sand in the Massive section which also carried a good showing of oil at 8999-9057 feet.

California was preparing to perforate A. B. Learned 1, 21-9n-10e, same field, in the Massive sand. Casing was set at 9141 feet.

De Soto Parish: Tom Palmer's wildcat, Walter Hill 1, C NW SE 3-10n-13w, is drilling below 975 feet. This Pettit lime test is in the Benson area.

Arkansas-Louisiana Gas Company gauged 165 million cubic feet of gas per day on open flow to complete Dema P. Furlow 1, N&W of C 25-12n-16w, in the Logansport gas field. Rock pressure was 2816 pounds. The well is producing through 96 perforations from 5974-96 and 72 perforations from 6008-23 feet, and was treated with 10,000 gallons of acid before the final gauge was taken.

Grady H. Vaughn is drilling below 5615 feet in McGrew 1, C SW SW 34-16n-14w, Pettit wildcat.

Richland Parish: Gulf Refining Company made another producer for the Delhi field at Ed Hopper 2, 28-17s-9e. The well gauged 30 barrels of fluid per hour through 5/16-inch choke, of which 50 percent was wash water. Perforations were at 3356-61 and 3345-56 feet, with 5½-inch casing cemented at 3419 feet. Total depth is 3420 feet.

Caddo Parish: Phillips Petroleum Company is assured of a second producer in the Blanchard field at Leake 1, C NE NW 32-19n-16w, which is flowing 156 barrels of 44-gravity oil per day, accompanied by 500,000 cubic feet of gas through drill-stem using ¼-inch top and bottom chokes. Production is understood to be from perforations opposite the Travis Peak at 5900 feet. Phillips' Moneyham 1 was discovery well of the area.

Spacing Rule Amended

To avoid a multiplicity of applications for off-center locations in the West Edmond pool of Central Oklahoma, the Oklahoma Corporation Commission has amended its rules to permit drilling at any point within a radius of 150 feet from the center of its spacing unit without the necessity of obtaining specific authorization from the commission. The order was made necessary because of the topography of the pool which caused numerous requests for irregular locations from operators.

☆ Arkansas

Columbia County Wildcat Swabs Oil on Latest Test

Columbia County wildcat swabs oil on latest test; county continues center of drilling activity.

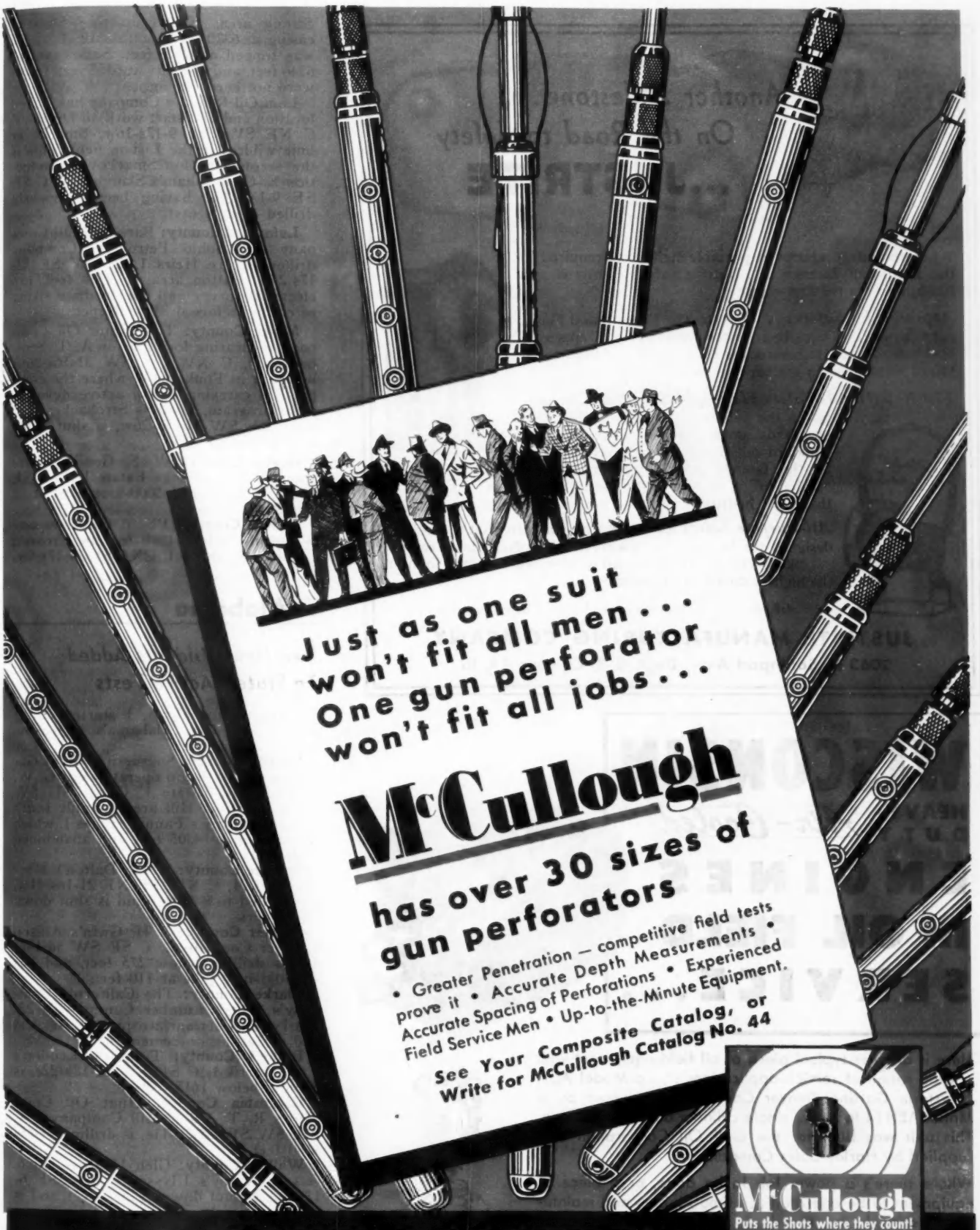
Columbia County: McAlester Fuel Oil Company's wildcat, Couch 1, C NW SW 11-16s-20w, McNeil area, reportedly swabbed 30 barrels of oil and some wash water per 24 hours on latest test, following acidization with 1200 gallons in 24 perforations from 6757-61 feet opposite the Smackover lime. Testing continued. The wildcat is 1¼ miles east and ½ mile south of same operator's Luck 1, C NE NE 9-16s-20w, a dry hole completed in August, 1944, at 6950 feet in Smackover, but without any showings of commercial quality.

Durbin Bond, Trustee's Townsite 1, C S½ S½ SE 10-17s-19w, Village field, was drilling below 2175 feet, after cementing 13⅜-inch casing at 140 feet.

Midstates Oil Corporation's G. W. Taylor et al 1, NW 4-20s-20w, Haynesville field, has been perforated with 120 shots opposite the Pettit horizon from 5460-78 feet and treated with 5000 gallons of acid, and was swabbing. The well has been drilled to 5588 feet and 5½-inch casing cemented at 5586 feet after electrical survey was run.

Blackwell Oil & Gas Company has not yet found commercial production in Waller-Beene 1-A, C NW SE 10-23n-8w, in Haynesville, and is drilling below 9025 feet in the Cotton Valley. The well is about 105 feet lower on structure than the recent producer completed by Arkansas Fuel Oil Company. That company is now drilling below 4328 feet in anhydrite in Waller-Taylor 1, 14-23n-8w.

Union County: Root Petroleum Company was waiting on cement in Union Saw Mill 2, C SW NW 27-18s-12w.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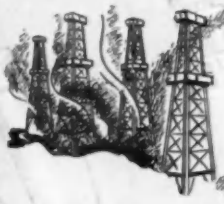

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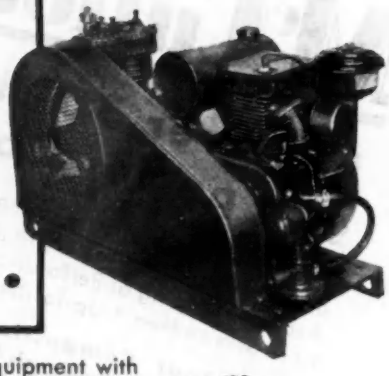

Here is another typical piece of oil field equipment with a wide range of service applications . . . a Model ADA two-stage Gardner-Denver Compressor, powered by a Model AEH (4 to 6 hp.) single cylinder air-cooled engine. This unit was built for the Gulf Oil Corporation and supplied by Harley Sales Company.

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Strong area, after cementing 5½-inch casing at 6379 feet, total depth. Buckner was topped at 6304 feet, Smackover at 6346 feet, and porosity at 6355 feet. Cores were not encouraging.

Lion Oil Refining Company has staked location and will start work on Dumas 1, C NE SW SW 9-17s-16w, Smackover lime wildcat in the Lisbon field. This is the second try for Smackover production E. G. Bradham's Slaughter 1, C SE SE 9-17s-16w, having been previously drilled ¾ mile east.

Lafayette County: Barnsdall Oil Company and Sohio Petroleum Company drilled Moore Heirs 1, C NW SE 32-17s-24w, Patton area, to 4538 feet, ran electrical survey and intermediate string of casing before drilling deeper.

Miller County: The Carter Oil Company is clearing location for A. T. Strohacker 3, C NW SE SW 31-16s-26w, new test in Fouke field, where the company is carrying on an active development program. Carter's Strohacker 2, C NW SW SW 31-16s-26w, is shut down at 3584 feet.

Desha County: W. S. Goodman has spudded S. A. Banks Estate 1, NW SE 32-9s-4w, proposed 5000-foot wildcat in the Dumas area.

Ashley County: Placid Oil Company is drilling below 4010 feet in Crossett Lumber Company 1, CNE SE 34-17s-9w.

☆ Alabama

Two New Wildcats Added To State's Active Tests

Two more wildcats, 1 started and 1 staked, added to Alabama's increasing activity.

Wilcox County: Southern Natural Gas Company will begin operations at G. W. Morgan, Jr., Estate 1, C SE SE SW 32-12n-5e, Pine Hill area, ½ mile south of the company's Fannie Stokes 1, which was drilled to 4305 feet and abandoned in January.

Fayette County: W. M. Dalton's Morris White 1, C NW SE NE 21-16s-11w, has drilled to 840 feet and is shut down for repairs.

Sumter County: J. H. Gwin's Allison Lumber Company 1, C SE SW 36-19n-4w, is drilling below 275 feet, and has set 10¾-inch pipe at 110 feet.

Clarke County: The California Company's Scotch Lumber Company 1, 25-10n-1w, has set surface pipe at 768 feet and is waiting on cement.

Bullock County: T. M. McLendon's J. L. Harris 1, C SE SW 12-12n-22e, is drilling below 1615 feet.

Escambia County: Hunt Oil Company's R. T. Miller Mill Company 3, C SW SW SW 32-3n-11e, is drilling below 4180 feet.

Walker County: Glen D. Rose Oil & Gas Company's Ulysses 1, NW SE 6-13s-6w, is shut down at 2001 feet, and is waiting to move in heavy rig. No shows have been reported.

Choctaw County: Hunt Oil Company's Robert Land 4, C SW NE 31-11n-4w, in the Gilbertown field, has been completed with an initial production of 66 barrels per day through ¼-inch choke. Previously the well had flowed 90 barrels of oil and 10 barrels of salt water per 24 hours. Indications are that this will be one of the best producers in the field.

☆ Mississippi

Baxterville Field May Get Extension in Texas Prospect

Possibility of Baxterville field extension with shows of oil in Texas Company prospect; activities in Mallalieu field practically cease; indications of Smackover lime in Tinsley field deep test; wildcat activity centers in Rankin County.

Marion County: The Texas Company's V. E. Ladner 1, SEc NE 12-1n-17w, has had encouraging shows indicative of commercial production. If this well is successfully completed it would extend the Baxterville field in Lamar County ½ mile across the line into Marion County. In a drill-stem test at 7783-7806 feet in sand, stringers of the Tuscaloosa zone dark condensate and mud cut with condensate were recovered. Tubing pressure was 1750 pounds. Base of chalk was logged at 7585 feet and sandy shale cored in a section between 7664-7680 feet. Previous tests, all taken in stringers below 7700 feet, recovered shows of gas and condensate. The well will be drilled to the Massive sand where there are good possibilities of production.

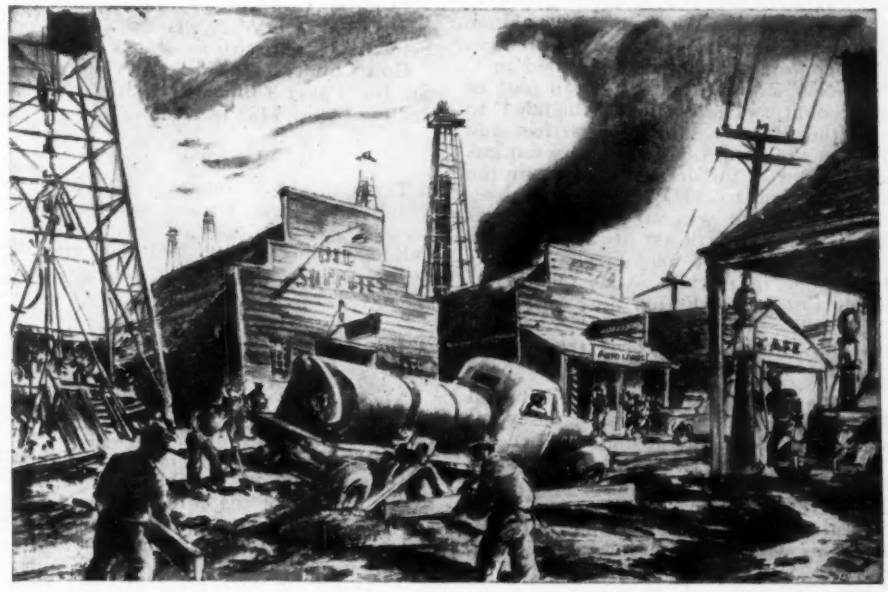
In the Hub field Humble Oil & Refining Company's discovery well, Evans 1, was still attempting to cut down its gas-oil ratio in an effort to develop an oil producer. Brought in as a condensate well, it was plugged due to high water and when again opened for production, it began flowing oil of low enough gravity to be considered crude. Gas pressure had also dropped. Two other wells are also being drilled in the Hub field. Humble's A. E. Ball, NWc 20-2n-14e, is drilling below 800 feet and The California Company's W. E. Walker 1, SEc 10-2n-18w, has reached 6970 feet with no shows reported.

Lincoln County: The California Company is reported to be temporarily abandoning most of its operations in the Mallalieu field. The company's T. I. Busby 1, NWc 14-6n-8e, has been abandoned in the Massive sand at 10,440 feet with no shows, and the J. W. Douglas 1, SWc 11-6n-8e, was abandoned at 10,598 feet. Oil and Considerable salt water had been recovered from tests in the Massive sand at 10,504-20 feet, but nothing indicated commercial production. California's M. R. Douglas 1, SWc 11-6n-8e, continued to test without encouragement after pumping 20 barrels of oil and 259 barrels of salt water in 24 hours.

Franklin County: Gulf Refining Company's Ella G. Lees 1, NWc 32-7n-1e, Cranfield field outpost which is attempting to extend production from Adams County into Franklin County, is drilling below 9774 feet with no shows reported. Cores from 9585-9603 feet in the Austin zone recovered dark gray shale with streaks of sand.

Rankin County: Leonard Jones is reported to have produced about 800 barrels of 14.9-gravity oil from the old Boehle 1, gas well in 18-5n-2e. The well is indicated to be flowing at the rate of 25 barrels a day but is actually operating only about 2 hours a day. The well was completed as a gasser in 1935 with production from 2448 feet. Two

PIONEERS ★ ★ ★ *from a lithograph*



BOOM TOWN *By E. M. Schiwetz*

THE TEXAS boom town is reminiscent of the feverish days at the turn of the century when Texas' great oil industry was being born.

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years ago the well died and it is only recently that it has been reworked. Considerable interest is also being shown in Love Petroleum Company's Denkman Lumber Company-Denkman Distributees 2, deep test which will be drilled in C SW NW 22-7n-4e, northeastern part of the county. The well is scheduled to test the Massive sand to 7500 feet and lies on the flank of the old Jackson gas dome. One of the deepest wildcats in the state drilled to 12,004 feet and abandoned last year without any shows was about 3 miles northeast of the new location, but extensive geological work has been done meanwhile. Atlas Oil & Refining Company's Freida Burham 1, SEc NE 3-12n-5e, has reached 7846 feet with no shows reported. Cores from 7781-7801 feet recovered only sand and shale.

Jones County: Gulf's E. S. Gambrell 1, SEc NE 34-10n-14w, has had several shows of gas in sand stringers above the Tuscaloosa zone. In a drill-stem test at 7030-45 feet, mud and water cut with gas were recovered. The well was waiting on cement after squeezing out perforations. Gulf's E. L. Geiger, NEc SE SE 5-9n-11w, wildcat venture, is drilling below 6075 feet with no shows.

Yazoo County: Union Producing Company's Jennie Stevens 21, NWc 12-10n-3w, the first of several wells in the Tinsley field to prospect deeper horizons, had encouraging shows of oil from cores taken at 10,836-56 feet and 10,856-66 feet in lime. It has not been definitely determined whether the strata of lime encountered was a true Smackover formation but reports indicate it is, in which case prospects for production at this new deep horizon would increase enormously. In both cores the lime was tight, but a drill-stem test is being run to explore the situation.

Jasper County: Gulf's Z. R. Umbarger 1, NEc SW SW 32-1n-13e, in the East Heidelberg field, has been completed with an initial flow of 92 barrels of oil per day. Gravity of the oil is 23.1 and tubing pressure 185 pounds. Against this successful completion was Gulf's abandonment of Mrs. A. D. Livingston 1, SEc 24-1n-12e, at a total depth of 5803 feet. The uneven faulting of the East Heidelberg field has resulted in a considerable number of dry holes being balanced against successful completions. A. W. Hutchings Drilling Company's Chester Buxton 1, C SW NW NE 19-1n-13e, is swabbing oil after perforating opposite the Eutaw horizon at 4778-4946 feet.

Florida

Humble Oil & Refining Company's G. C. Carleton Estate 1, 34-38s-29e, Highlands County, is still coring below 9104 feet in lime and dolomite. Tests in porous lime at 8964-98 feet recovered only salt water. The well is about 60 miles north of the Sunniland field.

Collier County: Humble is puttiing Gulf Coast Realty Company 4, 20-48s-30e, Sunniland field, on the pump. Latest test produced an estimated 18.99 barrels of fluid per day through ⅜-inch choke, of which 58 percent was salt water and 42 percent oil. Tubing pressure was 20 pounds. Total depth is 11,597 feet. Rig and derrick are being moved to Gulf Coast Realty 7, where the next test will get under way immediately.

Charlotte County: Humble's Lownes-Treadwell 1-A, C SW NE 17-42s-23e, is drilling in dolomite and lime below 2310 feet.

Monroe County: O. D. Robinson's State 1, NEc NW 29-59s-40e, is drilling below 5530 feet with no shows.

Gulf County: The Pure Oil Company's St. Joe Paper Company 1, 10-7s-9w, is drilling below 5488 feet.

Georgia

Tropic Oil Company's Gibson 1, Toombs County, 5 miles southwest of Lyons, Georgia's only prospect at present, is drilling below 3681 feet after 4 drill-stem tests failed to recover any shows.

Advisory Committee Named

A committee to act as an advisory group for the Interstate Oil Compact Commission was announced at a meeting in Jackson, Mississippi, of the public relations group of the Mississippi-Alabama division of the Mid-Continent Oil and Gas Association. On the committee are C. L. Morgan, chairman; W. A. Vaughey, vice chairman; E. D. Kenna, secretary; J. D. Davis and Michael McCay.

Kansas Properties Sold

Walter Beech of the Beech Aircraft Corporation, Wichita, Kansas, has purchased ¼ interest in eight wells in Barton County, Kansas, from W. L. Hartman, independent operator, for $40,000. Included in the deal are two wildcat wells drilling in 3 and 8-20s-13w.

Paul Fleeger has assigned to Shell Oil Company a large block of acreage in townships 20 and 21 south, ranges 30 and 31 west, in Lane and Finney counties, Kansas.

☆ California

Plans Approved for Unit Operation of Two Fields

Plans approved for unit operation of Rio Bravo and Helm oil fields; deep test is proposed to test Vedder formation in North Coles Levee field; Kettleman Hills Middle Dome well to be deepened for a look at Eocene; 2 Los Angeles Basin deep exploratory holes now well below 12,000 feet.

Kern County: After many months of negotiation, unit operation agreements have been signed by operators in 2 Kern County fields. General Petroleum Corporation, The Superior Oil Company, and Union Oil Company have signed an agreement for the Rio Bravo field which will go into effect as soon as lessor signatures have been obtained. George F. Getty, Inc., which operates 3 wells in the field is not yet a party to the agreement, but negotiations are being carried on to that end. Second field to be unitized is Helm, participating companies being Standard Oil Company of California, Amerada Petroleum Corporation and General Petroleum. Efforts made to unitize operations in the Coalinga Nose field have been unsuccessful to date.

Standard of California's Cahn 58-4, deep test of the Lost Hills field, is drilling below 10,350 feet and should soon have the answer to the value of the Eocene formation in that field. Core taken from the well between 10,299 and 10,305 feet consisted of 2 feet of brown shale, 18 inches hard Glauconitic sand, and 1 foot of hard brown shale. A core from 10,305 to 10,325 was all hard brown shale.

A deep test with interesting possibilities has been proposed for Coles Levee North. Plan is to test the Vedder.

Other new wildcats scheduled for early spud in the county include Rothschild Oil Company's Jasmine 25-1 in 25-25-27, a joint test with C.C.M.O. Company and The Texas Company's Westpet 21-29 in 29-29-21, Temblor area.

Tide Water Associated Oil Company abandoned Lamont K & M 27 in 5-31s-29e, a deep test of the Mountain View area, after finding nothing of interest to 10,007 feet.

Kings County: Standard of California is expected to make a test of the Eocene on the Middle Dome of Kettleman Hills by deepening the old Middle Dome Corp. 30-V-73 well from present bottom at 7790 feet. The well was originally drilled and brought to successful completion by Petroleum Securities Company in 1936 from the Temblor formation.

Tulare County: H. H. Magee, Operator, is preparing to drill Heitcig 1 in 36-24-23, Trico area, which will be a deep test to the Vedder. Location is less than ½ mile southeast of Standard of California's duster, Morris 1, which was drilled to 11,460 feet and abandoned in January, 1938.

In the Pixley area, Shell Oil Company has abandoned Parsons 36-1, in 1-23s-25e. The well drilled into slate at 5476 feet and quit at 5485.

Contra Costa County: Shell has abandoned East Bay 1 in 13-1n-3w at 8408 feet. Well was located in the Piedmont Hills section of the Oakland district. It was drilled in hilly country where many gas seepages were found in tunneling for water.

Santa Barbara County: Location for another test of the area southeast of the Elwood field in 24-4n-29w has been made by Union Oil Company, which abandoned Storke 1 at 5022 feet last week but prepared to start work at once on a new test on the Campbell ranch nearby.

Ventura County: In the same area where C.C.M.O. Co. drilled the world's first 10,000-foot well (a duster) many years ago, the company has just established a new depth record for the Rincon field in its Hobson C-11 in 17-3n-24w, which recently passed the 11,000-foot mark in a search for new deep production.

Los Angeles County: Union Pacific Railroad has announced a new drilling program in the Wilmington field and has staked locations for 14 wells.

Shell has 2 deep tests drilling below 12,000 feet in the Los Angeles Basin. Its Reyes 135 in the Dominguez field is fishing for drill pipe at 7865 feet, with bottom at 12,455 feet. Alamitos 48A at Long Beach is spot coring below 12,680 feet.

In Pico Canyon, Standard of California has had to abandon its deep exploratory hole, P.C.O. 42, 1-3n-17w, at 8258 feet. Repeated attempts to whipstock the well up structure failed.

Imperial County: Amerada has suspended operations in its Veysey 1 wildcat near Brawley, 9-13s-14e, and has moved equipment to its Timken 1 in the El Centro area, 28-16s-14e, for deepening from its present bottom at 3120 feet.

Upper Left—Cratered Well—beginning of the job.

Upper Right—Stabbing on a Flow Line.

Center—Gin Pole set to run 8⅝" casing.

Lower Left—Dragline used to dig in crater to find top of casing.

Lower Right—Well closed in and killed.

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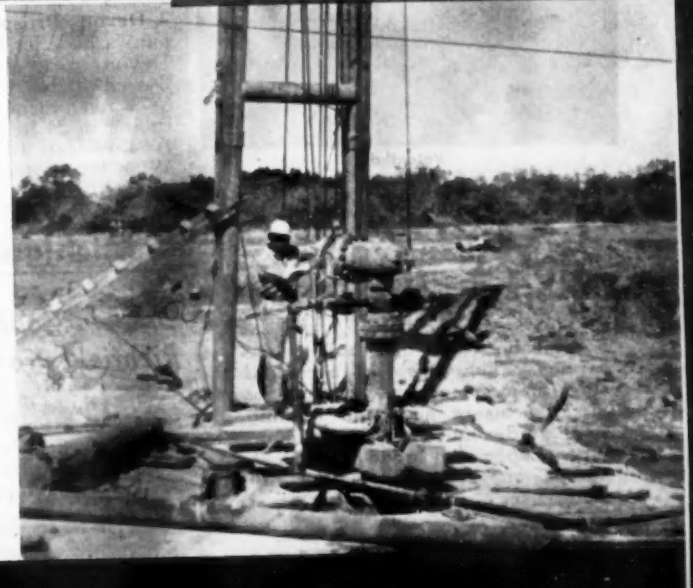

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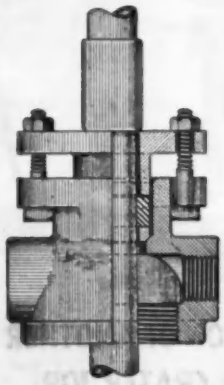

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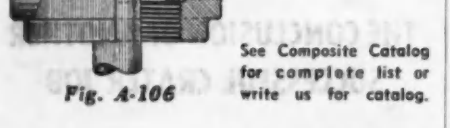

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☆ Rocky Mountain Area

Pure Spots Its First Wildcat in Wyoming

Pure spots its first Wyoming wildcat; Devon pool in Montana extended by Texas' Wier 2; lenticular sand in Powder Wash field, Colorado, flows 100 barrels an hour on drill-stem test.

Bailey Dome: Sinclair-Wyoming Oil Company's Milton Coffman 2, SE NW NE 21-26n-89w, Carbon County, Wyoming, flowed 674 barrels in 24 hours from the Sundance sand at 5204 feet. Top of the Sundance sand was at 5132 feet and the 7-inch casing was cemented at 5207 feet and perforated opposite the producing horizon. Upper part of the sand contained gas. The well is ¼ mile west of the discovery, which was completed in January in the Sundance for 381 barrels natural in 16 hours. Coffman 3 will be drilled as a diagonal offset north of the 2 producers.

Powder Wash: Mountain Fuel Supply Company's Allen 3, SE SE NW 33-12n-97w, Powder Wash oil and gas field, Moffat County, Colorado, tested a 19-foot sand in the Wasatch formation at 4338-57 feet, open 45 minutes, which flowed at the rate of 100 barrels an hour through the drill pipe. Another gas sand, estimated at 5 million cubic feet per day, was picked up at 4528 feet. Location is ½ mile east of Stewart 2, which flowed 1505 barrels from the oil sand in 24 hours. Sands at Powder Wash are lenticular, and initial spectacular performance of a well does not necessarily mean the presence of large reserves over any considerable area.

North of Worland: First wildcat to be drilled in this area by The Pure Oil Company has been spotted in its unit 1, NE NE NW 18-48n-92, north of Worland, Washakie County, Wyoming. It is on the eastern side of the Big Horn Basin and is several miles west of a number of local highs which have been tested to shallow horizons in the past without results. Location was made following extensive geophysical surveys.

Devon Prospect: The Texas Company's E. Wier 2, NW NE NE 4-33n-1e, Devon area, Toole County, Montana, flowed 40 barrels of oil and 15 barrels of water, through a ¼-inch choke on tubing in 24 hours from the Madison at 1664-65 feet. It is 2 locations north of Wier 1, the discovery well which averaged 20 barrels of oil on a 12-day test.

☆ Michigan

Osceola County Given Richfield Producer

The Ohio Oil Company's Boettcher 1, S½ NW SE 28-18n-9w, deep test in the Cedar field, Osceola County, flowed from 68 to 86 barrels of oil per day on a 3-day test following 1000 and 3500-gallon acid treatments to the Richfield zone between 5060-5160 feet. It is the first deep test in the old Cedar Dundee lime pool and the first in Osceola County to produce in the Richfield.

Kent County: Smith Petroleum Company has commenced cable tool drilling operations on a projected 5300-foot St. Peter sand test on the Sherk 1, C SE SE 21-5n-10w, Caledonia Township wildcat.

Isabella County: Wicklund Development Company has cemented 5-inch casing on Hein 1, SE SE SE 13-14n-6w, preparatory to a production test in the Dundee lime at 3765 feet. Wildcat drilled into Monroe black water at 3856 feet.

☆ Illinois Basin

Rains Hamper Operations; Carter Wildcat Tested

Heavy rains continue to hamper operations, and in some sections streams are bringing work to a standstill.

Richland County: The Carter Oil Company has set casing for production test of McClosky lime at Borah 1, NW NE NW 20-2n-10e, wildcat test 8 miles southwest of Olney, Illinois. During a drill-stem test the well showed 150 feet of clean oil and no water.

Franklin County: Fox's Franklin County Mining Company 1, NW NE SE 11-7s-4e, a wildcat operation, has been abandoned as dry at 3362 feet. A small show of oil in St. Genevieve series was non-commercial.

White County: Pittsburgh and Fairmont Coal Company's Lang 1, NW NW SE 25-5s-9e, a wildcat venture 2 miles

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BE SURE TO CHECK THE
TRADING POST SECTION
ON PAGE 111 OF THIS ISSUE

south of Carmi and 2 miles from production, was preparing to test McClosky lime at 3157-60 feet, which during a drill-stem test made 250 feet of clean oil and no water. Well showed gas 45 minutes.

Gallatin County: Ashland Oil Company abandoned Davis 1, SE NW SE 1-8s-8e, wildcat operation, as a dry hole at 3010 feet.

Oklahoma Gas-Distillate Field on Restricted List

The new Chitwood gas-distillate field in southern Grady County, Oklahoma, and the state's deepest producing zone, was placed on the restricted drilling list by PAW and no wells may be drilled without specific exceptions from the district office at Chicago. Under the ruling it is expected that only one well per 160 acres will be permitted.

The field was discovered by Magnolia Petroleum Company with the completion of Cunningham 1, CSE SE 33-5n-6w, in lower Pennsylvanian sand at 10,879-882 feet. Initial tests showed 95 million cubic feet of gas daily. The well was worked over and on final gauge flowed 113 barrels of distillate in eight hours with 2½ million cubic feet of gas per day. Magnolia has about 5000 acres of leases around the well, which is east of the Chickasha gas field. Plans to unitize all leases on the structure and drill a number of wells irrespective of property lines to determine the extent of the structure are being discussed.

Jurisdiction Questioned

The Oklahoma Corporation Commission has asked the attorney general to determine the respective powers of the Commission and the State Planning and Resources Board in the matter of salt water disposal in oil fields in Oklahoma. The recent legislature passed a law giving the Planning and Resources Board certain powers in the matter of salt water disposal, creating doubt as to the Commission's previously exercised jurisdiction. Meantime the Commission granted a permit to a group of oil companies to drill salt water disposal wells in the Canadian County sector of the West Edmond pool, but the order was protested by landowners who argued it would injure their land.

Whealton Appointed

R. G. Whealton, Los Angeles, has been appointed director of production on the Pacific Coast (District 5) for PAW, succeeding E. L. Davis who resigned to return to industry. Whealton, formerly connected with M. O. Johnston Oil Field Service, has served as assistant director of production for the last year.

Veterans' Program

The Veterans' Personnel Division, State Selective Service Headquarters, Austin 17, Texas, has compiled a bulletin covering the Veterans' Program for the State of Texas. The booklet contains general information for veterans of the armed forces and their dependents. Anyone dealing with problems related to ex-service men and women will find the publication of value since it refers to appropriate agencies.

In actual service under all operating conditions as applied to every type of pipe assembly, Harrisburg Drop-Forged Flanges prove their excellence. The unvarying uniformity of these Flanges meets every test of strength and safety, and their use by the country's largest industries points to the fact that Harrisburg Drop-Forged Steel Flanges deserve your consideration and trial. Low hub, Vanstone, Butt Welded and Slip-on types. Harrisburg makes its own steel.

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EXPLORATORY COMPLETIONS

CALIFORNIA WILDCATS

Kern County—Failures: J. H. Maurer-A. C. Bishop Jean 1, 15-26s-28e, Dominion area, basement 1057 ft, Walker 793 ft, Pyramid Hills, 563 ft, abnd 1074 ft in granite.

Rothschild Oil Co.'s Movious 1, 10-28s-27e, Kern Front area, Santa Margarita 2703 ft, abnd 2723 gray sd.

Tide Water's Lamont K&M 27, 5-31s-29e, Mountain View area, Santa Margarita trans zone 7220 ft, Olcese 9918 ft, abnd 10,007 ft.

U. S. Dr. Co.'s Ball 1, 2-27s-28e, Mt. Poso area, gray Vedder 1060 ft, abnd in basement 1449 ft.

Los Angeles County — Failure: Standard's P.C.O. 42, 1-3n-17w, Pico Canyon area, abnd 8258 ft.

San Luis Obispo County — Failure: Norris Stamping & Mfg. Co.'s Dresser 1, 9-27s-13e, Paso Robles area, perf 2110-56 ft, bailed wtr and tr of oil, abnd 2932 ft.

Santa Barbara County—Failure: Union Oil's Sterke 1, 24-4n-29w, Elwood area, abnd 5022 ft.

Tulare County — Failure: Shell's Parsons 36-1, 1-23s-25e, Pixley area, brown shale 4856 ft, Famoso sd 4921 ft, slate 5476 ft, abnd 5485 ft.

Yolo County—Failure: Texas Co.'s Dunnigan 14-1, 12-10n-1w, Dunnigan Hills area, base Capay sh 2801 ft, abnd 4715 ft.

CALIFORNIA OUTPOST

Kern County—Midway-Sunset Failure: Richfield Oil Corp.'s Fairfield Fee D-1, 1-31s-22e, abnd 3195 ft in gray sd.

ILLINOIS WILDCATS

Clark County — Failure: H. H. Wright's Doran 1, nw nw nw 29-9n-13w, abnd 1325 ft.

Edwards County—Failure: J. E. Housenca's Luther 1, sw nw nw 18-1n-14w, abnd 3258 ft.

Gallatin County—Failure: Ashland's Davis 1, se nw se 1-8s-8e, abnd 3013 ft.

Hamilton County—Failure: Nat. Assoc. Pet. Co.'s Hall 1, se sw ne 9-5s-7e, abnd 3420 ft.

Marion County—Oil Discovery: Paul Doran's Young 1, se ne se 12-2n-1e, Cyp sd 1746-61 ft, pump 125 bbls, td 1761 ft.

White County—Failure: Herndon Drlg. Co.'s Brown 1, se se nw 11-5s-10e, abnd 3160 ft.

White County—Oil Discovery: H. O. Yoder's Holland 1, ne sw sw 31-6s-9e, McCl 2712-26 ft, pump 77 bbls, td 2726 ft.

KANSAS WILDCATS

Barton County — Discoveries: Yellow Cab Co.'s Carroll 1, sw ne se 21-17s-14w, Arb 3358-59 ft, pump 150 bbls 39-gr, td 3359 ft.

Champlin Ref. Co.'s Christianson 1, ne sw ne 29-20s-14w, Arb perf 24 shots at 3601-11 ft, flow 8 min gas, spray oil-wtr, td 3642 ft.

Barton County—Failures: Ainsworth Bros.' Fenn 1, sw sw ne 7-19s-14w, Lans 3271 ft, Arb 3572 ft, abnd 3605 ft.

Champlin Ref. Co.'s Tuggle 1, ne sw nw 28-20s-14w, Arb 3602 ft, abnd 3626 ft.

Jackson County—Failure: Dan McLaughlin Dev. Co.'s Allen 1, nw nw ne 32-8s-16e, Arb 3025 ft, abnd 3068 ft.

Kiowa County—Failure: Stanolind's Zentz 1, 29-29s-18w, Lans 4280 ft, Cong 4866 ft, Vi 5097 ft, Arb 5383 ft, abnd 5440 ft.

Marion County — Failures: Ward McGinnis' Propp 1, nw ne 24-19s-3e, Arb 2810 ft, abnd 2829 ft.

Phil-Han's Klassen 1, sw se se 18-21s-1e, Lans 2334 ft, Miss 2968 ft, Ki 3264 ft, Hunt 3391 ft, Vi 3483 ft, Simp 3516 ft, Arb 3585 ft, abnd 3620 ft.

McPherson County—Failure: P. B. Allison's Stuckey 1, swc ne 12-21s-2w, Lans 2317 ft, abnd 2996 ft.

Pawnee County—Failure: Inland Oil Co.'s English 1, sw nw sw 1-21s-15w, Lans 3320 ft, Cong 3611 ft, granite 3709 ft, abnd 3714 ft.

Rice County—Failure: Sheffler Drlg. Co.'s Inscher 1, sec sw 7-21s-9w, Lans 2959 ft, Cong 3280 ft, Vi 3303 ft, Simp 3353 ft, Arb 3394 ft, abnd 3425 ft.

Rush County—Failure: Vickers Pet. Co.'s Suhckman 1, nwc 20-16s-18w, Lans 3307 ft, quart 3614 ft, abnd 3619 ft.

Saline County—Failure: J. Kronfeld et al's Lindell 1, ne ne se 34-16s-3w, Lans 2217 ft, Miss 2927 ft, Vi 3441 ft, abnd 3450 ft.

Sedgwick County—Failure: Beech Aircraft's Gehring 1, ne nw sw 16-28s-2e, KC 2505 ft, Miss 2975 ft, chat 3255 ft, Simp 3305 ft, Arb 3386 ft, abnd 3395 ft.

Seward County—Failure: Carter's Chapple 1, cen 23-31s-32w, Her 2603 ft, Kri 2656 ft, Wre 2724 ft, Ft. Riley 2765 ft, Flo 2855 ft, abnd 2890 ft.

Stafford County — Failure: Champlin Ref. Co.'s Guthrie 1, sw se ne 10-25s-11w, Vi 3916 ft, Simp 4015 ft, Arb 4090 ft, abnd 4118 ft.

KENTUCKY WILDCAT

Webster County—Failure: Iley Browning's Knight 1, 10-M-24, abnd 2837 ft.

NORTH LOUISIANA WILDCATS

Grant Parish—Failure: Geo. W. Woodward's Jack Thompson 1, 5-5n-3w, abnd 1800 ft.

Jackson Parish—Gas Discovery: Shell's Tremont Lbr. Co. 1, 22-15n-1w, elev 254 ft, Wilcox 1234 ft, Chalk 2968-3320 ft, Anhy 5912-6360 ft, Pettit 7380 ft, Travis Peak 7732 ft, Cotton Valley 10,260 ft, perf 142 shots 9584-9620 ft, gauge 8 min gas, 18/64-in, cp 750 lbs, tp 3150 lbs, shut in, td 10,300 ft.

SOUTH LOUISIANA WILDCATS

St. Martin Parish—Failure: Yegua Corp.'s Guchereau et al 1, start lower front cor sect 71 go s 50° 30 mins w alg lower side line sect 71 for 802.2 th n 39° 30 mins w at ra 1130 to lcn in 71-9s-5e, sso in 11,392-96 ft, abnd 11,660 ft.

Terrebonne Parish — Failure: Sun's Realty Operators 1, 1500 n of sl 1000 e of wl 72-17s-16e, abnd 11,540 ft.

SOUTH LOUISIANA OUTPOST

St. Landry Parish — Shuteston Extension: Claude F. Morgan's Frank Dimmick 1, 1650 n 80° 45 mins w 340 n 9° 15 mins e of sec 173-7s-4e, sand 10,290-380 ft, perf 24 shots 10,368-374 ft, flow 32 bbls 51-gr, 10/64-in, gor 44,911/1, td 10,414 ft.

SOUTH LOUISIANA NEW PAY TEST

Acadia Parish — Bayou Mallet Discovery: Union Sulphur Co.'s George R. Bradley 1, 2930.9 w 4058.9 n of sec irregular sect 52 in 51-7s-1e, perf 8538-42 ft in Vicksburg, flow 104 bbls 36.1-gr, 7/64-in, gor 960/1, tp 1400 lbs, td 9712 ft.

MICHIGAN WILDCATS

Allegan County—Failure: Neil Wagenaar's Willink 1, sw nw sw 19-4n-15w, abnd 1482 ft.

Osceola County — Failure: Fisher-McCall's

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■ NATIONAL No. 2 drill rig, complete three strings tools, crane, forge, etc., from RFC surplus property sale. Everything in cable tools. S. W. Pressey, Pueblo, Colo.

■ FOR SALE: Power Drilling Rig with 4½″ Oil Well Drawworks and 5 x 12 Gardner-Denver Pump both with brand new 145 HP Waukesha Motors never been run. Address: Box 40, c/o The Oil Weekly, Houston, Texas.

■ FOR SALE: 800 8¾″ OD, Style 38 Dresser Couplings with new bolts and gaskets, in excellent condition. Utility & Industrial Supply Company, 921 E. Michigan Avenue, Jackson, Michigan.

■ FOR SALE: Used "Welderz Frend" acetylene gas generators. I buy and recondition. W. B. Mackey, 6509 Hillsboro St., Houston, Texas, Phone W-7714.

■ FOR SALE: One Model 12 Buckeye Trenching Machine. H. L. Gentry Engineering Company, 921 E. Michigan Avenue, Jackson, Michigan.

1—Wilson Atlas Power Rig complete with 2 Cummins Diesel Engines, 225 HP each, 7¼″ x 18″ Wilson-Snyder Power Pump (completely overhauled), 27½″ National Oil Bath Rotary, 5000′ 4½″ OD Drill Pipe with full hole Joints, Wire Line, all Derrick Equipment, Tools, pipe and hand, 1000 gallon Fuel Tank, and all necessary equipment required to complete entire rig.
6000′—4½″ OD Drill Pipe with full hole tool Joints, exceptionally good condition.
1—Complete Power Rig for approximately 4000′ drilling, with National Type K Drawworks, Reverse Gear, 14″ National Power Pump, 2 WOK Waukesha Engines (completely overhauled), 4000′ 4½″ OD Drill Pipe with full hole Joints, and all necessary Pipe and Hand Tools.
4—122′ x 24′ Base API Derricks.
1—6¾″ x 14″ Type EXK Gardner-Denver Power Pump, (Completely overhauled).
Address: Empire Oil Field Machinery Company, Odessa, Texas.

■ FOR SALE: Smith Five Hundred Pound Quarter by Twelve Carbide Generator—slightly used—bargain. Jay Helvey, Lee Hotel, Jackson, Mississippi.

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1— 7,500 barrel welded closed steel tank.
1— 5,000 barrel riveted closed steel tank.
1—Parkersburg SC 11 pumping unit, stroke 5′ to 11′ in excellent condition. At a bargain price.
Jos. Greenspon's Son Pipe Corp., National Stock Yards, St. Clair County, Illinois.

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■ FOR SALE: 7 Complete Strings of Cable Tools capable of drilling to 6500 ft. complete with derricks, engines, wire lines, etc. In excellent condition. Utility & Industrial Supply Company, 921 E. Michigan Avenue, Jackson, Michigan.

NOTICES

■ 2500 acre oil and gas grant royalty free in Gaspe Quebec, Canada, wells approximately 700′ deep. First well drilled in 1865 and produced 30 barrels daily. Property has been dormant since. Five companies in that area, three active. Need partners to help finance drilling. W. R. McMaster, Box 103, Gaspe Quebec.

LEASES, DRILLING ACREAGE, ETC.

■ FLORIDA low-priced, royalties and drilling blocks, in areas extensively leased by majors. Address: Box 2191, Orlando, Florida.

HELP WANTED

■ WANTED: Driller, experienced on Sullivan hydraulic core drill. Location, Rocky Mountains. Address: Box 35, c/o The Oil Weekly, Houston, Texas.

■ **Wanted by a consulting geophysical organization, Petroleum Engineers with Hayward Mud-logging experience or its equivalent. Immediate openings in Venezuela. Excellent opportunity for advancement to managerial positions throughout the world. Address: Box 45, c/o The Oil Weekly, Houston, Texas.**

■ CLERK—Warehouse and Office Clerk wanted by Responsible Oil Field Equipment Manufacturer. Permanent. Opportunity for Advancement. Starting Approximately $200.00. Address: Box 43, c/o The Oil Weekly, Houston, Texas.

■ WANTED: Production Superintendent for Texas Gulf Coast and North Louisiana. Prefer a man with engineering background. Address: Box 50, c/o The Oil Weekly, Houston, Texas.

■ WANTED: One graduate chemical engineer with up-to-date mud, oil-field, corrosion and salt water disposal experience. Total field experience 4 to 7 years. Location, New York, with occasional trips to domestic and foreign fields. Those interested communicate. Address: Box 51, c/o The Oil Weekly, Houston, Texas.

■ WANTED: One graduate mechanical, mining or petroleum engineer as equipment engineer with 4 to 10 years experience in allocation, design and standardization of drilling, production, condensate and compressor equipment. Location, New York, with occasional trips to domestic and foreign fields. Those interested communicate. Address: Box 52, c/o The Oil Weekly, Houston, Texas.

■ WANTED: Two graduate chemical engineers with up-to-date mud experience backed by 2 to 3 years experience in field. Preferably single. Location, South America. Those interested communicate. Address: Box 53, c/o The Oil Weekly, Houston, Texas.

ENGINEER-WRITER WANTED

An immediate, permanent position is open on The OIL WEEKLY editorial staff for men capable of preparing articles describing new or improved oil field operating methods and equipment. Work highly interesting and educational; includes combination of office and travel duties, and an unusual opportunity to see new things and meet people. Location in Houston office.

In addition to ability to meet people and to write publishable articles on oil field drilling and producing operations in simple understandable language, requirements include: knack of recognizing new operating techniques and "wrinkles," use of camera and typewriter, and personal car.

State education, age, oil field experience, writing experience, and salary expected above traveling and car allowance. Address: The Editor, The Oil Weekly, Box 2608, Houston 1, Texas.

Cool 1, s½ se sw 5-19n-10w, Dundee 3729 ft, abnd 3850 ft.

Saginaw County — Failure: Rowmor's Malone 1, se ne se 7-12n-3e, Dundee 3274 ft, abnd 3585 ft.

MISSISSIPPI WILDCATS

Clarke County — Failure: Carter Oil Co.'s Long Bell Pet. Co. 1, c sw ne 14-4n-16e, Eutaw 2804 ft, Tuscaloosa 3227 ft, Massive sd 4240 ft, abnd 4770 ft.

Jefferson County—Failure: Tidewater's B. F. Buie 1, 12-8n-4e, Tuscaloosa 9618 ft, Massive sd 10,486 ft, abnd 10,759 ft.

OKLAHOMA WILDCATS

Carter County—Failure: Pure's Genn 1, nw nw nw 7-3s-2e, abnd 8586 ft.

Comanche County — Failure: J. S. Morris' Norton 1, sw nw nw 35-2n-10w, abnd 1425 ft.

Garfield County—Failure: Globe O&R Co.'s Batchelder 1, nw ne nw 28-22n-3w, Lay sd 4263 ft, abnd 4351 ft.

LeFlore County—Failure: LeFlore Cty Gas & Elec Co.'s Schumann 1, ne se 3-8n-26e, abnd 4117 ft.

Lincoln County—Failure: Jordon Pet. Co.'s Keegan 1, nw nw sw 4-13n-5e, abnd 4910 ft.

Logan County—Failure: Renco's Howland 1, se ne se 30-19n-3w, abnd 5535 ft.

Pontotoc County—Failure: Rhinehart et al's Larsh 1, ne nw sw 17-2n-5e, abnd 937 ft.

WEST TEXAS WILDCAT

Andrews County—Failure: Magnolia's Martin 1, c ne ne PSL 13, blk A-47, elev 3280 ft, anhy 1750 ft, Yates 2980 ft, San Andres 4590 ft, Glorietta 5830 ft, Clear Fork 6270 ft, Tubb (Fullerton) sd 6720 ft, Woodford sh 9075 ft, abnd 10,118 ft.

WEST TEXAS OUTPOSTS

Gaines County—Russell Extension: Shell's Pierson 1, c ne sw sect 452, blk G, CCSD&RGNG sur, 1¼ mi e of prod, elev 3552 ft, brown li 3900 ft, white li 5150 ft, Clear Fork 5920 ft, pump 105 bbls 33-gr, 8000 gals acid Clear Fork 7282-7727 ft.

Andrews County—Mascho-Fuhrman Extension: DeKalb Agricultural Assn.'s Lockhart-Brown 1-A, near c se nw PSL 15, blk A-42, 1¼ mi nw of prod, elev 3246 ft, Yates 2870 ft, frosted grains 2890 ft, San Andres 4538 ft, pump 131 bbls 31.5-gr, 5% wtr, 2000 gals acid 4364-4540 ft, td 4593 ft.

WEST TEXAS NEW PAY TEST

Andrews County—Fullerton Oil Discovery: Chalmette Pet. Corp.'s Lake Shore Corp. 1.

SITUATION WANTED

■ Married man, 41, with 26 years practical experience in drilling and production. Twenty years in Oklahoma, six in Illinois. Experienced cable tool and rotary driller. Have been employed past five years in present position as superintendent of production and drilling. Would like connection with company in Oklahoma. Address: Box 42, c/o The Oil Weekly, Houston, Texas.

■ Dr. M. G. Rutten, 34, Geologist. Experience: 3 years as oil geologist in Dutch East Indies, 4 years coal mining geologist, Dutch coal mines. Address: 30, Akerstraat, Hoensbroek, Holland.

■ For Service Abroad. Business Administrator, 32, B.Com., M.E. Ten years practical experience U. S. and Canada—Costing, Audits, Processing, Mechanical Engineering, Business Administration, assuming responsibilities. British subject, speaking French and German. Honorably discharged veteran R.C.A.F. with valid British Passport for Foreign Travel. Excellent References. Apply in Confidence—Advertiser, Post Office Box 90, Station "H," Montreal 25, Canada.

Man with 20 years experience as Drilling and Production Superintendent desires position as Drilling or Production Superintendent or both. Would buy interest in drilling rigs with reputable contractor and look after same. References. H. Y. Tores, 633 N. Jefferson Avenue, El Dorado, Arkansas. Phone 843.

ADVERTISING RATES

TRADING POST SECTION

Regular classified advertisements for this special section, set in type this size without border, take flat-rate of 7 cents per word for the first insertion and 5 cents per word for each subsequent insertion of same copy. Display advertisements for this section, set in suitably larger type with ruled border, are $5.00 per inch for the first insertion and $4.00 per inch for subsequent insertions. Remittance must accompany copy which should be sent to:

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C. N. Hilton, President

c nw ne PSL 24, blk A-26, 1⅛ mi nw of Clear Fork prod, elev 3356 ft, Yates 2890 ft, San Andres 4330 ft, Glorietta 5650 ft, Tubb 6600 ft, Fullerton 6890 ft, pump 40 bbls 35.2-gr oil, 4 bbls wtr, 5000 gals acid San Andres perf 4530-4650 ft, td 7637 ft in Wichita-Albany, pb 4767 ft.

WEST CENTRAL TEXAS WILDCATS

Coleman County—Oil Discovery: C. A. White & Henry O. Newman's C. L. Gunn 1, 990 nsl 660 ewl HT&B Ry. 40, 2 mi se of Williams sur, elev 1987 ft, flow 12 bbls 42-gr oil, ¼-in, 30 qts nitro in Strawn 3355-75 ft, td 3515 ft, pb 3380 ft.

Shackelford County — Failure: Hedrick Oil Co.'s Nail 2, nw ne nw E.T. Ry. sect 121, abnd 1679 ft.

Stephens County—Failure: A. W. Cherry-B. Kidd's Waller 1, 330 out nwc TE&L Co. sect 1520, elev 1216 ft, Bend 3455 ft, Marble Falls 3964 ft, Ellenburger 4304 ft, abnd 4352 ft.

SOUTH CENTRAL TEXAS WILDCAT

Frio County—Failure: Humble's H. & R.C. Roos 1, 5600 fr nwl 9240 fr nel 9170-ac lse and S. M. Williams-S. F. Austin sur 964, abnd 8600 ft.

SOUTH CENTRAL TEXAS OUTPOST

Bastrop County—Hilbig Failure: Walden Oil Co.'s B. B. Friske 1, 330 fr se&swl 145-ac lse, Jacob G. Lentz sur 20, abnd 2848 ft.

SOUTHWEST TEXAS WILDCAT

Starr County—Failure: Glenda Oil Co.'s F. S. Guerra 1, 497 fr sel midway between ne&swl of lot 17, Clark subdvn tr 5, porc 109-111, Salinas part, abnd 2068 ft.

LOWER TEXAS COAST WILDCATS

Bee County—Failure: Dash Prod. Co.'s A. & M. Holzmark 2-C, 755 se with swl 2370 ne at ra 339-ac lse, J. A. York sur, elev 340 df, abnd 3613 ft.

Jackson County—Failures: Butcher-Arthur's L Rch 1-A, 660 fr s&el 40-ac lse, Santa Teresa sur lot 17, abnd 7045 ft.

H. J. Porter's Joe Volkmer 1, 2000 fr nel 330 fr sel 134.6-ac lse, Tacitus Clay sur, abnd 2826 ft.

Kleberg County—Failures: Sam E. Wilson, Jr.'s Joe Dvorak 1, 467 fr n&el 60-ac lse, and sw¼ sect 8 King addn 3, abnd 9133 ft.

Sam E. Wilson's A. L. Kleberg 1, 467 fr e&sl sect 1, 547.5-ac lse, Kleberg T&I Co. subdvn, abnd 7524 ft.

LaSalle County — Failure: Quintana Pet. Corp.'s South Tex. Synd. 3-F, 2500 fr m/sly & wly/wl 96,000-ac lse, A. J. & J. J. Dull sur 112, 330 fr m/wly/nl of same, 750 nw of Well 1-F, sw Washburn field, abnd 5737 ft.

Nueces County—Failure: Homer Easterwood et al's Mantor & Briggs 1, 330 fr el 990 fr sl blk 16 700.26-ac lse, Mantor-Briggs & Kuykendall subdvn of Casa Blanca & Dejaen Grs, test gas in perf 6395-6405 ft, abnd 7306 ft.

LOWER TEXAS COAST NEW PAY TEST

Jim Wells County—N. Magnolia City Oil Discovery: Edwin M. Jones Est.'s J. E. Bennett 5, 467 fr wl tr 2 and 934 n of well No. 1, 509-ac lse, Roberts & White subdvn, elev 1515 df, dual comp, Presnall sd 5492 ft, perf 16 shots 5493-97 ft, flow 263.49 bbls 37.5-gr, 11/64-in, gor 578/1, tp 840 lbs; perf 16 shots 5413-16 ft, flow 157.32 bbls 30.5-gr, 11/64-in, gor 441/1, cp 415 lbs, td 5700 ft.

UPPER TEXAS COAST WILDCATS

Brazoria County—Failure: C. H. Alexander's J. J. Settegast 1, 330 fr nw&swl W. D. C. Hall sur and 50-ac lse, Pearland area, abnd 6292 ft.

Hardin County—Failure: Houston Oil Co. of Tex.-American Republics' Rice Institute 1, 2374 fr nl of 706-ac lse and county 660 w of el of Chas. Stewart sur, 7426 s of Village Mills prod, elev 117.7 ft, abnd 9258 ft.

Harris County — Failures: General Crude's Mrs. Harold Bishop 1, 660 fr wl 682.4-ac lse and W. M. Francois sur 2500 fr sl lse, 3 mi se of Cypress, abnd 7705 ft.

Eltex's Henry Koinm 1, 1400 fr nwl 375 ft swl 60.39-ac lse, 3300 nw of sel 1807 ne of swl of A. Mays sur, Westfield area, abnd 7517 ft.

San Jacinto County—Failure: Navarro Oil Co.'s Foster Lbr. Co. 1-A, start at s cor Polk CSL sur go ne alg sel Pol sur for 3250 th se at ra 1400 to lcn in Taylor sur, Cold Spring area, abnd 9738 ft.

Walker County—Failure: Magnolia's Thompson-Long Leaf 1-A, 629 se at ra to nwl F. E. Willis sur, 800 se of Houston County line, 178.9-ac lse, Kittrell area, abnd in Woodbine 9981 ft.

EAST TEXAS WILDCATS

Bowie County—Failure: A. M. Sutton et al's Newkirk 1, 500 nw of sel 1980 ewl of Jesse Dean sur A-137, 4½ mi nw Oak Grove, abnd 7305 ft.

Hill County—Failure: Ray T. Rimmer et al's Norton 1, 5500 wel 3450 nsl J. M. McCarter sur, elev 716 ft, abnd 580 ft.

Hunt County—Failure: N. G. Landrum-R. B. Campbell's Adams 1, 330 nsl 1350 fr m/s/wl of 100-ac tr, H. T. Chenowith sur, elev 565 ft, Austin chalk 1250 ft, Eagleford 1695 ft, Woodbine sd 2835 ft, abnd 3066 ft.

Upshur County—Failure: W. W. Bradley et

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PAGES 3079 THRU 3098 IN THE COMPOSITE CATALOG

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al's Simpson 1, 400 nsl 1200 ewl J. J. Hooper sur, elev 346 ft, Nacatoch 1924 ft, Pecan 2634 ft, Austin 3697-3765 ft, Georgetown 4120 ft, abnd 5262 ft.

NORTH TEXAS WILDCATS

Archer County—Failure: Fortex Oil Corp. et al's Morbitzer-Waggoner 1, 330 out nec sect 62, blk 3, Clark-Plumb sur, elev 1019 ft, Bend 5152 ft, abnd 5305 ft.

Foard County—Failure: Mid-Continent's Tom Burnett 1, c sw se S.P. Ry. 9, blk L, elev 1882 ft, abnd 6830 ft.

Jack County—Failure: Roeser-Pendleton-F. Kirk Johnson's Williams 1, 467 ft out swc of ne 640 ac of J. Turner sur A-609, elev 1242 ft, abnd 3083 ft.

Throckmorton County—Oil Discovery: Guinn & Myers' M. Daws 1, 150 nsl 1800 wel C. W. Marquess sur A-236, elev 1232 ft, pump 2 bbls 35-gr, sand 522-23 ft.

Throckmorton County — Failures: Bridwell Oil Co.'s J. C. Irvine 1, 150 out nec of E. E. Irwin sur A-1273, abnd 1245 ft.

Cochran & Cain's Herron 2, 1050 nsl 150 wel nw¼ TE&L Co. 1607, abnd 865 ft.

Noble County: Magnolia's Wollard 1, sw sw sw 34-22n-2w, lcn.

Okfuskee County: Texas Co.'s Boylsin 1, nw se nw 6-11n-8e, lcn.

Oklahoma County: Vickers Pet. Co.'s Varnum 1, se sw sw 25-14n-1w, mit.

Texas County: Phillips' Gayle 1, ne ne sw 21-1n-12e, lcn.

Washita County: Texas Co.'s Wolfe 1, nw sw 20-9n-20w, dk.

WEST TEXAS

Andrews County: Magnolia's Lillian Stevens 1, c se se PSL 10, blk A-48, 2 mi w Fullerton-Devonian, 8800-ft test.

Cochran County: Texas Gulf Prod. Co.'s Allie Slaughter 1, 550 ft out nwc of 444-ac lse, or 7800 ft nsl 7384 ft wel Lge 113, Potter CSL sur, 3 mi w by n Dean pool, 5300-ft San Andres test.

Howard County: C. W. Guthrie et al's Robt. W. Scott 1, c nw se W&NW Ry. 64, blk 29, 3500-ft test.

Martin County: Continental's E. W. Douglas 1, ne ne ne T&P Ry. 33, blk 34, T-3-N, 6700-ft Clear Fork test.

Pecos County: Robt. M. Payne et al's H. C. Scott Stanfield & Francisco's Walter Brown 1, se se nw 7-3n-26e, machine for 1500-ft Yates sand test.

OKLAHOMA

McClain County: Carter's Mottinger 1, nw nw 5-6n-3w, lcn.

WILDCAT STARTS

ALABAMA

Fayette County: Carter Bell's Mrs. Wright 1, sw nw 13-16s-12w, lcn.

CALIFORNIA

Solano County: Amerada's Winship Estate A-1, 23-7n-2e, gas test, ru.

Tulare County: H. H. Magee, Op.'s Heitcig 1, 36-24s-23e, Vedder deep test, rig.

Kern County: Rothschild Oil Co.'s Jasmine 25-1, 24-24s-27e, dr.

Texas Co.'s Westpet 21-29, 29-29s-21e, lcn.

Rothschild-Bender Oil Op.'s Sheep Springs 6, 17-29s-21e, lcn.

Santa Barbara County: Union Oil's Campbell 1, 24-4n-29w, ru.

Madera County: Shell's Edison-Securities 25-20, 20-13s-16e, gas test, ru.

ILLINOIS

Edwards County: Phillips' Tait 1, sw se sw 5-3s-10e, lcn.

Effingham County: Globe O&R Co.'s Webster 1, se sw se 27-6n-6e, lcn.

Fayette County: Paul Doran's Gochenour 1, sw se nw 28-6n-2e, lcn.

Jefferson County: C. A. Lynch's Richardson 1, ne nw sw 20-3s-3e, lcn.

J. V. Canterberry's Fee 1, se se se 7-4s-3e, lcn.

Cherry & Kidd's Adams 1, se se sw 16-4s-3e, lcn.

Lawrence County: J. S. Young, Jr.'s Lewis 1, sw sw se 17-2n-13w, lcn.

Parriott & Sprowls' Warner 1, nw ne sw 26-5n-12w, dr 217 ft.

Perry County: Magnolia's Armstrong Hrs. 1, sw ne sw 8-6s-3w, lcn.

John Pugh's Kimmel 1, sw sw se 16-7s-1w, lcn.

INDIANA

Dubois County: Eldon Hayden's Hochgesang 1, sw se se 7-2s-4w, dr.

Vanderburg County: Kingwood Oil Co.'s Field 1, nw se se 13-4s-10w, lcn.

Warrick County: J. E. Carlson's Roller 1, ne nw se 34-5s-7w, dr 337 ft.

KANSAS

Barton County: Inland Oil Co.'s Arnold 1, nw sw nw 8-19s-15w, lcn.

Royer Farris' Meyer 1, nw ne se 32-20s-11w, dr 185 ft.

Cowley County: S. H. Yarnell's Hansen 1, sw nw ne 31-33s-3e, lcn.

Pawnee County: W. P. Faulkner's Kelley 1, nw nw nw 16-21s-16w, lcn.

Rice County: C. H. Weaver's Ankerholz 1, se se nw 14-19s-10w, dr 3117 ft.

Rooks County: Darby & Bothwell, Inc.'s Vohs 1, nec 14-10s-19w, lcn.

Rush County: B&R Drlg. Co.'s Taylor 1, ne ne nw 14-16s-16w, mim.

Sheridan County: Continental's Hoxie State Bk. 1, nec 32-8s-26w, rur.

Stafford County: Keyes Drlg. Co.'s Hartnett 1, se nw sw 18-22s-11w, lcn.

Phillips' Effie 1, ne ne nw 36-24s-13w, lcn.

Sumner County: John Winters' Butterworth 1, nw ne 31-32s-2e, dr 3304 ft.

Trego County: Ohio's Rollsch 1, nec 2-12s-22w, lcn.

SOUTH LOUISIANA

Rapides Parish: Louisiana Land & Exploration Co.'s J. A. Bentley Tract 2-1-C, start nec 25-4n-5w, go n 87° 15 mins w 1828.5 th s 00° 10 mins e 664 to lcn in 25-4n-5w, Wilcox test.

MICHIGAN

Saginaw County: Fred Riddell's Trautner 1, nw ne ne 20-13n-4e, lcn.

Van Buren County: C. E. Grime's Way 1, se se sw 35-1s-13w, dr.

MISSISSIPPI

Clarke County: W. A. Walsingham's Louis J. Rousel 1, sw 10-2n-16e, lcn.

Wayne County: Humble's U.S.A. 1, nw se 23-7n-9w, lcn.

Wilkinson County: Rogers Lacy's W. S. James 1, swc 4-1n-1e, lcn.

NEW MEXICO

De Baca County: Scott Stanfield et al's Marshall et al 1, ne ne ne 18-3n-26e, 1 mi ne Fort Sumner, spd & sd.

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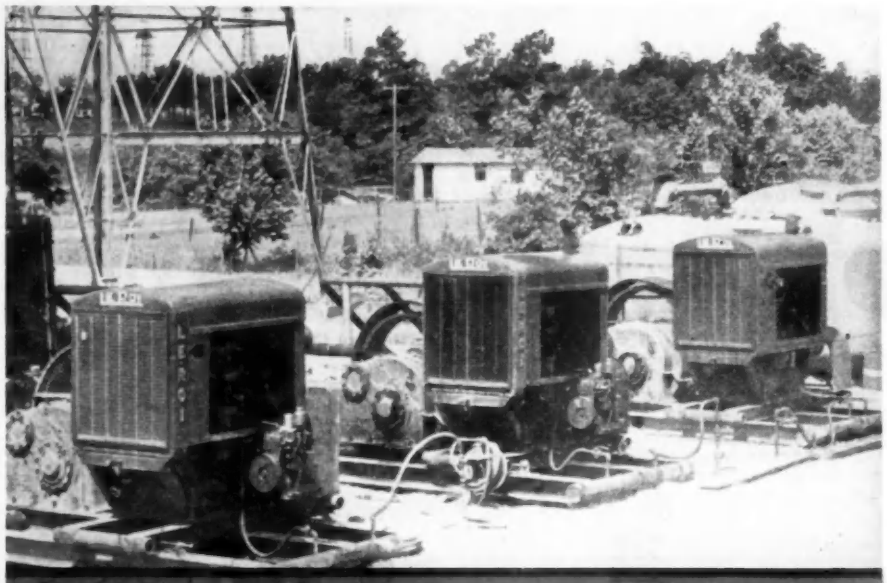

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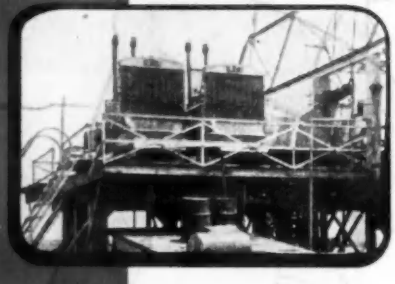

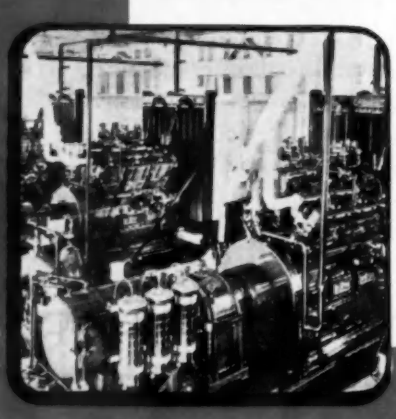

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P-60

McLain 1, c w½ of n¼ H&TC Ry. 7, blk 2, 6000-ft Ellenburger test.

Reeves County: Argo Oil Corp.'s Mrs. Dora Roberts 1, c nw se H&GN Ry. 294, blk 13, 7⅞ mi ne Saragosa, 5500-ft Delaware test, combination rig.

Scurry County: Denver Prod. & Ref. Co.'s Otto Hoepfl 1, ne se se H&TC Ry. 234, blk 3, 4⅝ mi s by e Hermleigh, 3200-ft cable test.

Yoakum County: Hunt Oil Co.'s E. A. Graham 1, c nw nw sect 328, blk D, J. H. Gibson sur, 5500-ft San Andres test.

WEST CENTRAL TEXAS

Parker County: Humble's C. H. Tompkins 1, 660 snl 2050 wel T&P Ry. sect 169, 4 mi nw Weatherford, 7500-ft Ellenburger test.

Shackelford County: Hickok P&D Co.-Harry Reynolds' Merrick Davis 1, 2420 snl 660 ewl T&P Ry. 21, blk 12, 2000-ft cable test.

Roeser Pendleton-Continental's W. I. Cook 1-A-63, 157 wel 1597 nsl E.T. Ry. sect 63, 1600-ft cable test.

SOUTH CENTRAL TEXAS

Dimmett County: Humble's S. E. McKnight 1, 660 fr nw&swl lot 6 T&NO sur 15, subdvn "A" of Carrizo Park subdvn, 534.5-ac lse, ru.

SOUTHWEST TEXAS

McMullen County: Dee Davenport's Annie Graves Dolph et al 2-A, 2970 fr nl 330 fr wl sect 53 H. Tressler sur, 4200-ac lse, 6½ mi sw Ezzell field, woc 1398 ft.

Quintana Pet. Corp.'s South Tex. Synd. 7-F, 2185 fr sel 96,000-ac lse 4425 fr nwl J. S. Clift sur 489, 7000-ft test.

Quintana Pet. Corp.'s South Tex. Synd. 8-F, 2100 fr wl 330 fr nl Mary Lane sur 5 6800 fr nl 96,000-ac lse, 7000-ft test.

Webb County: Callaghan Land & Pastoral Co.'s Becerra Callaghan L.&P. Co. Fee 1, 330 fr s&el sur 440 2500-ac lse, elev 408.2 ft, 1500-ft test.

LOWER TEXAS COAST

Fayette County: John A. Deering-E. V. Abernathy's Susanna Haynie 1, 330 fr n&wl 20-ac unit of 151-ac lse, Thos. Cochran sur, blk 1, 5 mi se Smithville, spud.

Lasalle County: Quintana Pet. Corp.'s South Tex. Synd. 6-F, 700 fr sl 1000 fr el R. Jourdan sur 28, 96,000-ac lse, 5½ mi se Washburn field, dk.

San Patricio County: H. M. Amsler's C. L. Flinn 1, 467 fr nl 467 fr sel 100-ac lse, 1st subdvn of Taft lands, lot 1, blk 3, 6500-ft test.

UPPER TEXAS COAST

Brazoria County: Salt Dome Corp.-Butcher-Arthur's Elmo & Norman Doonan 1, 330 fr ne&sl of tr 17 and 100-ac lse, Thos. Spraggens sur, 7000-ft test.

Chambers County: Humble's State-Galveston Bay 1-D, 1980 fr sel 660 fr nel Galveston Bay sect 200, 1865-ac lse, s of Smith Point prod. 13,000-ft test.

Harris County: H. C. Cockburn's W. R. Reid 1, 330 fr n&el 176-ac lse, 1820 fr sl 330 fr el T. S. Lubbock sur, elev 69 ft, 4100-ft test.

Houston Oil Co. of Tex.'s H. D. Taylor et al 1, 466.5 fr nl 3174.2 fr el 2332.5 fr wl HT&B sur 5, 1359.5-ac lse, lcn.

San Jacinto County: S. A. Brewster-W. O. Bartle's Olive J. Park 1, 1320 fr n&wl H&TB sect 98, 330 fr n&el 40-ac tr in nw of sect, 10,000-ft test.

Wharton County: Donald W. Moore-T. J. Ahern's Hans Johnson 1, 330 fr n&wl L. L. Miller sur, sect 46 160-ac lse, 8000-ft test.

Texowell Service & Machine Co.'s Sam Hamburger 1-A, 660 fr s&wl WCRR sur sect 65, 480-ac lse, 4500-ft test.

EAST TEXAS

Leon County: Claude Bell et al's B. W. Browne-Carson 1, 4710 ne of swl 5278 se of nwl of Thos. H. Garner sur, 3 mi se Flynn, 7500-ft test.

Claude Bell et al's Rex Reed 1, 4580 nw of sel 4861 sw of nel Thos. H. Garner sur, 4 mi se Flynn, 2000-ft test.

Robertson County: Southworth-Dick Andrade's C. P. Briggs 1, 660 out middle sec of 130-ac tr, 3100 nw of sel 2925 sw of nel of L. Furdy sur, 5 mi n Calvert, 2500-ft test.

NORTH TEXAS

Archer County: J. A. McCarty-J. P. Coleman's J. J. Perkins 1, 165 snl 500 ewl of lot 3, sect 7, ATNCL sur, 1700-ft rotary test.

F. P. Timberlake-H. M. Kelleher's Luke Wilson-McCrory 1, 150 out nec Lot 629, Geraldine subdvn of sect 1, S.P.Ry. & ATNCL sur, 1700-ft rotary test.

Wilder Drl. Co.'s W. H. Taylor-C. L. Abercrombie 1, 450 snl 150 ewl lse, blk 14, J. W. Harris subdvn, lcn.

Clay County: Staley Oil Co.'s John Schaffer 1, 490 ewl 1700 nsl of A. McGowan sur A-519, 1450-ft test.

Young County: Lesco, Inc.'s Adam Furr 1, 467 out sec TE&L Co. sect 317, 5000-ft rotary test.

TEXAS PANHANDLE

Dallam County: Shamrock O&G Corp.'s J. M. Hester 1, nw nw se T&NO Ry. 355, blk 1-T, Permian gas test.

WYOMING

Fremont County: Shannon Oil Corp.'s State 1, sw nw ne 16-33n-91w, East Muskrat, rur.

Hot Springs County: Mule Creek Oil Co.'s Shad 1, se ne se 6-43n-91w, Murphy dome, mi for Embar-Tensleep test.

SQUEAKS from the BULL WHEEL

Patient Deflated

"Lady, if you want a health examination you'll have to remove your blouse."

"Oh, my goodness no, Doctor."

"Come, come, don't make mountains out of mole hills."

Mystery of Life

Little girl: "Why are babies always born at night?"

Another one: "Because they want to be sure to find their mothers at home."

Slight Difference

Prof: "Who's that smoking in the back of the room?"

Stude: "Nobody. It's just the fog we're in."

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He Said a Jugful

A Red Cross worker on a remote Pacific island called up the Army command and said, "We have a case of beri-beri here. What shall we do with it?"

"Oh, give it to the Seabees. They'll drink anything."

Honorable Man

"Mr. Jones, will you kindly explain all the quotation marks on your examination paper?"

"Why, certainly, Professor. That's just a little courtesy to the man on my right."

Making Money Last

Groom: "The bank just returned your check."

Bride: "Goody. What shall we buy with it this time?"

What a Relief

Wife: "Fred, wake up. There's someone creeping up the stairs."

Husband: "Really? What time is it?"

Wife: "Half past three."

Husband: "Well, thank godness it's not me this time."

Thoroughly Overhauled

"My, how you've changed! You used to have thick black hair and now you're bald. You used to have a ruddy complexion and now you're pale. You used to be fat and now you're thin. I'm surprised, Mr. Canning."

"But I'm not Mr. Canning."

"Look! You've even changed your name!"

Puzzle to Her

"Why do they call you a yes girl?"

"I simply don't 'no.'"

Last Request

"I want to die with my boots on."

"Well, put 'em on quick. Here comes my husband."

Timely Tale

The chief hopped into the barracks one morning to rouse a sleepy sailor.

"How did you happen to oversleep this morning?"

"Well, there were seven of us and the clock was only set for six."

Gumming the Works

"At last I've found a way to stop my husband biting his finger nails."

"How?"

"I hide his teeth."

Advice for Newlyweds

Does your husband (or wife) snore? The habit can be cured by good advice, cooperation, kindness and by stuffing an old sock in his (or her) mouth.

For Once He's Right

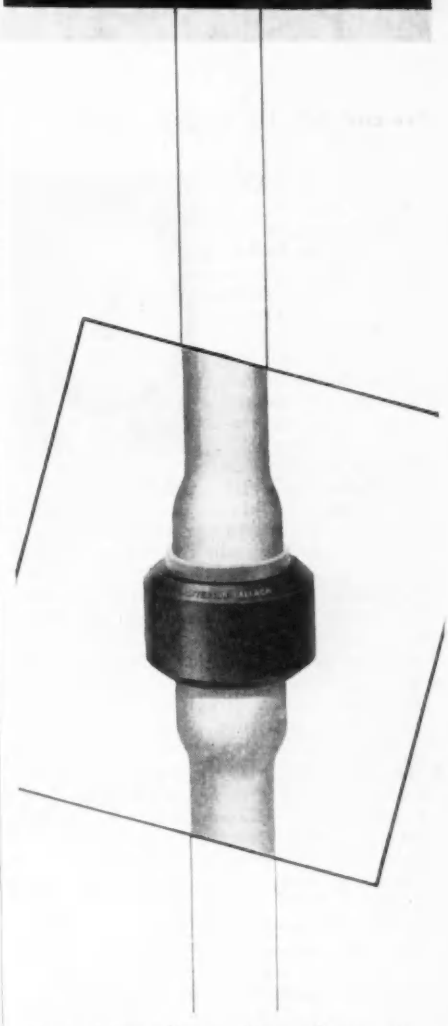
The weather man was haled into court on a speeding charge. "I'll let you off with a fine this time," said the judge, "but another day I'll send you to jail."

"That's exactly what I expected."

"What do you mean?"

"Fine today—cooler tomorrow."

"Best Bet Yet"



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These oil-proof, insulating, wear-resistant, plastic tubing protectors are an integral part of the tubing collar. Made in all sizes, they prevent the metal-to-metal contact that causes many expensive "wet" jobs in pumping wells. Without this contact, the collars do not wear holes in the casing.

See Composite Catalog

Patterson-Ballagh TUBING PROTECTOR

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MEN IN THE INDUSTRY NEWS

Everette Lee De Golyer, Dallas geologist, has been elected a director of Empire Trust Company, New York. De Golyer is a partner in the firm of De Golyer and MacNaughton of Dallas, and a director of Transwestern Oil Corporation, First National Bank of Dallas, and Louisiana Land and Exploration Company.

E. L. De Golyer

De Golyer is a graduate of the University of Oklahoma and an honorary Doctor of Science of Colorado School of Mines. He was formerly chief geologist of Mexican Eagle Oil Company and chairman of the board and general manager of Amerada Corporation. He is a member of various American and international scientific and engineering societies, and a director of American Petroleum Institute.

J. Norvelle Walker, vice president and controller of the Royal Oil & Gas Corporation, Philadelphia, has been elected vice president of the Philadelphia Control of the Controllers Institute of America.

Dan O. Howard, petroleum geologist, has been released by the Marine Corps to resume his position with the Oklahoma Corporation Commission.

Tom Philpott of The Carter Oil Company is the new president of the Shreveport Geological Society. Other officers include **Van D. Robinson** of The Atlantic Refining Company, vice president, and **W. A. Wallace, Jr.,** of Sohio Oil Company, secretary-treasurer.

H. W. Overman has been placed in charge of industrial friction materials for Thermoid Company, Trenton, New Jersey.

Armin G. Kessler has been appointed midwestern district sales manager for Farrel-Birmingham Company, with headquarters in Akron.

Kessler came to Farrel-Birmingham in 1920 as general manager of the company's plant in Buffalo. He has been a vice president and director of the firm since 1923.

Colonel Frank H. Higgins has been appointed president of The Fostoria Screw Company, Fostoria, Ohio.

Col. Higgins recently returned to inactive duty from the Army where he was chief of the heavy artillery ammunition branch of the Office of Chief of Ordnance in Washington, D. C. Prior to entering the service in 1942, he was assistant to the president of Sloane Blabon Corporation in New York City.

Foster Brooks Parriott, Tulsa oil operator, was elected a director of the First National Bank, Tulsa, succeeding **A. I. Levorsen,** who resigned to become executive head of the geological department of Stanford University, California. Parriott organized the Transcontinental Oil Company in 1919 and moved headquarters from Pittsburgh to Tulsa.

Hugh B. Key has been transferred by Mid-Continent Petroleum Corporation from Shreveport, where he had been in charge of land and scouting, to Tulsa to become an assistant to the vice president and to head the land and geological department of the company. **Myrl Mannschreck,** who has been in San Antonio, succeeds Key at Shreveport.

S. F. Shaw has completed a research airlift project, while acting as professor of petroleum engineering at Texas A. & M. College, and has resumed consulting practice at San Antonio.

Lum Price, Humble Oil & Refining Company salvage expert, is head of the Volunteer Committee for Industrial Salvage of Houston which recently was commended by the WPB regional manager. The group had shipped 413,000 long tons of salvageable scrap material up to May 1.

Jerry Maddox, geologist for The Carter Oil Company who has been serving in the Ponca City, Wichita and South Arkansas areas, has joined Carter's geological staff at Oklahoma City.

Will I. Lewis, independent drilling contractor formerly of Mt. Vernon, Illinois, has opened offices at 420 Republic National Bank Building, Dallas.

Lloyd G. Ensign, formerly general manager of Lee C. Moore & Company, Eastern Division, Pittsburgh, has resigned to become president of Oilfield-Industrial Export, Inc., with headquarters in Suite 5136, R.C.A. Building, 30 Rockefeller Plaza, New York. The company has been organized to engage in sales and services for the foreign market, specializing in oilfield and industrial equipment.

Lloyd G. Ensign

Ensign has been closely identified with the petroleum industry for 24 years, 15 of which were spent in charge of oil producing operations in South America and the West Indies. Another six years were devoted to oilfield equipment sales in export, and for the past two years he has engaged in the direction of operations and sales for Lee C. Moore.

Don S. Bowers has been elected president of W. C. Norris, Manufacturer, Inc., to succeed the late **W. C. Norris,** founder of the Tulsa oil field supply firm.

Don S. Bowers

Bowers had served previously as executive vice president of the Norris company. He has been with the concern for 30 years.

J. H. Eustice, general manager, was elevated to vice president, and **E. D. Forquer** and **Wm. L. Butler** were continued as secretary-treasurer and assistant secretary-treasurer, respectively.

George W. Walton has been named manager of drilling machinery sales of International Derrick & Equipment Company, with headquarters in the Continental Building, Dallas.

Walton has been associated with the old National Supply Company, with Wilson Snyder Manufacturing Company, with Emsco as vice president and sales manager, and with Unit Rig & Equipment Company as sales manager. Just prior to joining IDECO, he was connected with the development and handled the sales of the new Clark Bros. mud pump.

He is a member of the American Society of Mining Engineers, the American Petroleum Institute, the Nomads (Tulsa Chapter), the Engineers Club, Tulsa, the Tulsa Club, and the Dallas Petroleum Club.

Deaths

R. E. Allison of Shreveport, independent oil operator and contractor, died June 13. Allison, 65, entered the oil business in the early days of Spindletop. He drilled the first well at Gusher Bend, an extension of the old Crichton, Louisiana, oil field, and is credited with having discovered the first gas well in the Monroe field. He also opened the Shreveport oil pool near Cross Lake.

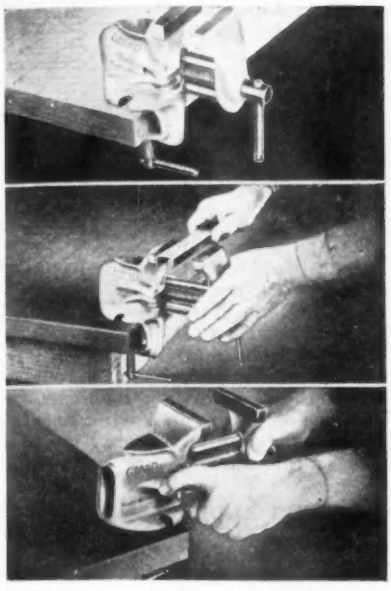
Malcolm J. Monroe of Houston, former assistant sales manager of Humble Oil & Refining Company, died June 7 at his ranch near Uvalde, Texas. Monroe began his career in the oil business as a tank wagon driver for the old Waters Pierce Oil Company in 1905. In 1910 he joined the sales department of The Texas Company. He joined Humble on January 1, 1918.

Sam G. Colbaugh, 44, district sales representative for Bradford Motor Works, Inc., died of a heart attack in El Dorado, Arkansas, June 4.

1—Machinist's Vise

Grand Specialties Company, 3135 W. Grand Avenue, Chicago 22, Illinois, has introduced a quick-action machinist's vise called Grand 3-inch QUIKCET Alloy-Steel Machinist's Vise. It is manually operated but eliminates running in or out the screw to close or open the vise. The vise can be set and closed by pushing on body of the free jaw which slides in swiftly on a ratchet screw and two precision guide rods and tightens with a turn of the handle.

The vise is also equipped with a trig-



ger release pawl with ¾-inch of thread which holds the hardened screw under spring tension. It opens to the full three inches by pressure of the thumb or finger on the trigger release after tension has been eased by a single turn of the loose-proof handle.

Made of alloy steel with greater than forged capacity, extra thick wall, heavy body construction and extra heavy precision guide rods, the vise has a balanced precision grip at all points. The jaws are serrated and hardened and polished and are integral with the body.

2—Cranes

Thew Shovel Company, Lorain, Ohio, has added two items of equipment to its line of cranes and shovels: The Moto-Crane "6 x 6," and the Self-Propelled Unit designed for on-the-job mobility.

Self-Propeled Unit

The Moto-Crane provides full six-wheel drive and exceptional soft-ground flotation for the heaviest going. It has eight speeds forward and two in reverse, giving it the capacity to move on the highway between jobs at 30 miles an

Moto Crane 6 x 6

hour or to crawl through off-the-road mud.

The crane capacity is 20 tons, and the machine is equally adaptable to shovel, clamshell or dragline work. The unit may be equipped with a winch on the front of the carrier powered by the carrier engine. It has proved ideal for pipe line and other off-the-road construction where power and traction for heavy going must be combined with versatile crane and shovel operation.

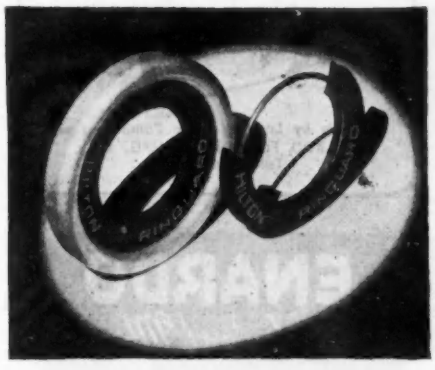
The Lorain Self-Propelled Crane is operated and propelled by a single operator and a single engine from a single control station. Combined with its four speeds ranging to seven miles an hour, this dual control feature gives the unit high mobility for high-speed material handling in supply, stock and industrial yards, docks and on semi-stationary construction operations.

The crane has 20-ton capacity, air-power steering, full revolving turntable, and simultaneous hoist, swing and travel. The front end is a heavy carrying table on which large objects can be rested while they are transported from one spot to another.

3—Flexible Liner

The L. D. Hilton Company, 508 Niels Esperson Building, Houston, announces the new Hilton Ringuard, a steel reinforced flexible liner for all sizes of API metal ring joints. The new liner is designed particularly to combat the corrosive and abrasive action encountered at the exposed-to-pressure section of the metal ring joint and serves as an auxiliary pressure seal.

The Hilton Ringuard employs a "V" groove type construction of oil and gas resisting material with a self-adjusting, spring steel wire core designed to keep the liner in the required operating position against the ring joint when bolt action is applied to the flange. The "V" groove design provides the well-known



Left: Hilton Ringuard inserted in standard type ring joint.

Right: Cut-away view of Ringuard showing spring steel wire core and "V" groove design.

lip action essential for pressure sealing. The liner is of proper thickness to insure a firm contact with the flange faces when these elements are brought into proper position by bolt action. The steel core prevents the normal tendency of the liner to bulge or spread into the open bore when flange bolts are tightened to secure the proper seal.

The use of the liner, it is claimed, hermetically seals off the ring joints from contact with the flow stream, thus preventing corrosion and wear caused by

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1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24

In addition to information checked above, I would like more data on products or services advertised elsewhere in this issue by _____ Company

Name _____ Title _____

Company _____

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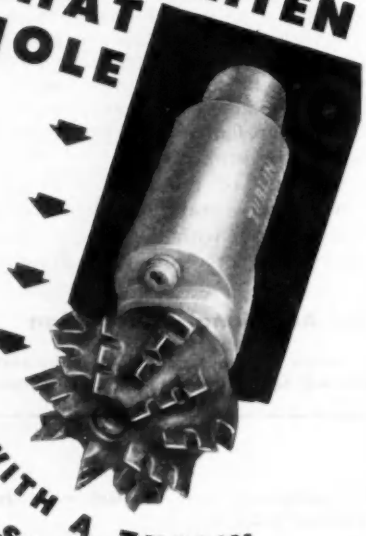

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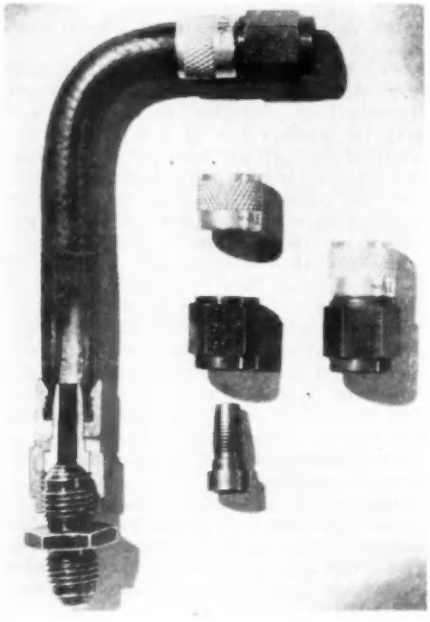
BAKERSFIELD, VENTURA AND AVENAL, CALIFORNIA

the abrasive action of foreign matter. At the same time the liner serves as an auxiliary pressure seal, it being pressure energized due to its contact with the flow stream, with resultant pressure sealing action being automatic and instant at the slightest leak of pressure past the metal to metal sealing surfaces of the ring joint and flange faces.

4—Hose Fittings

The Aeroquip Corporation, Jackson, Michigan, is marketing a new line of detachable, re-usable hose fittings for use with low pressure hose. All parts of the fitting assembly are removable and hose



lines can be made up with them by untrained personnel on the spot without special tools.

The fittings may be assembled and disassembled with a common wrench by holding the hose with one hand. Making the assembly involves simply screwing the fitting together without regard for torque and the assembly requires no tightening, no adjusting, and no continued future servicing.

5—Blasting Cap

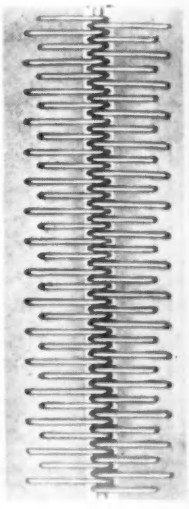
E. I. du Pont de Nemours & Company, Explosives Department, Wilmington 98, Delaware, announces an improved blasting cap, said to be the first important development in the electric firing of dynamite charges in half a century.

The electric blasting cap which has been perfected will, it is believed, reduce misfires to an absolute minimum.

The caps are sealed with a small rubber plug which is crimped into place in such a way as to make it virtually impossible for water to leak into the cap around it. Neither cold nor heat affects the new plug to an appreciable degree. Electric wires used with the cap are covered with nylon plastic, a solid, unbroken substance through which very little if any, electrical leakage can occur.

6—Wire Belt Hooks

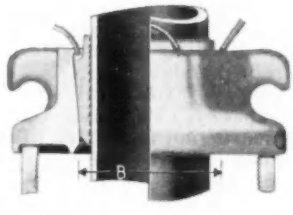
The Bristol Company, Mill Supply Division, Waterbury 91, Connecticut, has announced the addition of hinged-type wire belt hooks, known as Bristol's Belt Hooks, to its line of belt lacing products. The new hooks are designed for joining all types of flat belting, including leather, fabric, rubber, and balata belts. Various sizes are offered to take care of belts up to ⅜ inch thick.



A new method of mounting the hooks in the spacer card makes it possible to leave the card in place in the lacing machine during the lacing operation. The hooks are thus held in accurate alignment until the hook points pierce the belt. It is not until after the lacing operation has been completed that the card is removed. This method of carding insures a uniform spacing of the hooks and results in an even distribution of pull over the width of the belt.

7—Casing Support

National Supply Company of Toledo, Ohio, has developed a casing support which provides economical means for supporting medium length casing strings where no pressures are to be packed off



outside the casing suspended. Simple but strong construction provides for handling of rated loads up to 117,000 pounds.

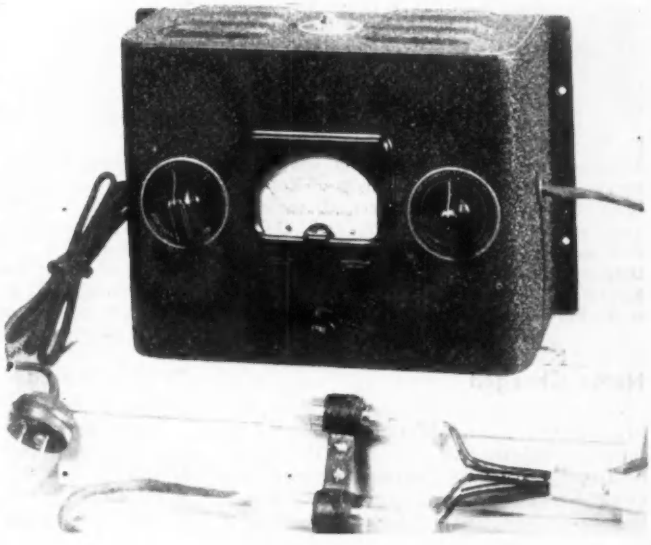
A spider, supported on the coupling

of the outer casing, holds the slips supporting the inner casing. Three-piece slips are assembled with a snap spring around the casing and lowered into the spider by means of wire rope handles. Hard slip wickers grip hardest grades of alloy pipe.

8—Vacuum Indicator

Continental Electric Company, Geneva, Illinois, announces a vacuum indicator for AC operation.

Calibrated to read pressures from .25 to 250 microns, the gauge is operated directly from a 110-125 volt AC line, and requires no batteries or additional equipment. A built-in fuse provides a safety feature against damage due to shorts and other faults. The dial shows pressure at all times, affording continuous reading. Accurate readings are indicated to plus or minus 5 percent with constant voltage input.



Construction is fool-proof and durable. Easy adjustment is provided for line voltage fluctuations through the use of a simple bridge circuit arrangement. A zero adjustment potentiometer is included. Meter and controls can be mounted at a distance from the point where measurements are to be taken. All electrical parts are used well within their rated values to insure long life and low cost operation.

Literature

9—Temperature Control Cabinets

Precision Scientific Company, Chicago, has issued Catalog 325 pertaining to constant temperature control cabinets. The catalog has 48 pages with illustrations of the equipment covered. Included is general information on mechanical and gravity convection heat transfer.

10—Hard Facing

Mir-O-Col Alloy Company, Los Angeles, has published the "Welders Guide to Successful Hard Facing." The booklet was prepared under the direction of W. Wesley Mills, director of research. The need for increased life wear on steel and iron surfaces is especially important at this time, and the subject of hard facing takes on significance. One of the requisites of a successful hard-facing job is the proper technique of application which is quite different from that of welding steel to steel. The booklet is an effort to set forth simply and understandably the result of 20 years of research and successful application of hard facing.

11—Air-Operated Tools

Ingersoll-Rand, 11 Broadway, New York 4, New York, has published a pocket-size folder entitled "Air-Operated Tools for Maintenance, Construction, Demolition." This bulletin shows the maintenance man, at a glance, the line of I-R air tools and portable compressors. Necessarily brief, only representative models are pictured although ample information is given as to size ranges and model variations.

A number of photographs illustrate air tools on construction, demolition and plant maintenance jobs. Several of these show new uses for well-known tools. Various accessories to air-tool operation are also shown, such as hose couplings, air line lubricators, steels and jackbits.

12—Pipe Outlets

Bonney Forge & Tool Works, Allentown, Pennsylvania, has published a "Handbook of Branch Pipe Outlets," a pocket-size manual for piping engineers. The booklet explains and illustrates the four simple steps in installing full pipe strength outlets by the weldOlet method, the tools needed to make the joint, the three types of fitting available for butt-welded, threaded and socket-welded branch pipe, and shows typical installations.

13—Spectrometer

North American Philips Company, Inc., 100 East 42nd Street, New York, has published an eight-page, illustrated booklet on the Gieger-Counter Spectrometer for industrial research use. H. Friedman of the Naval Research Laboratory, the author, discusses in detail the theory underlying x-ray powder diffraction and how the spectrometer works. Photos, diagrams and curves are used to illustrate the text matter. Gieger-Counter tubes, circuits and losses are covered at some length, and an explanation is given of the "flip-flop" counting action.

Use the Coupon

For free copies of Manufacturers' Literature or more information on products described on these pages, use the convenient mailing coupon on page 117.

14—Tachometers

General Electric Company, Schenectady, New York, has published bulletin GEA-4324 on measuring speed with electric tachometers. The bulletin gives a thorough discussion of the subject and includes illustrations of equipment and the various applications. Several types of tachometers are discussed.

15—Manganese Steel

American Manganese Steel Division of American Brake Shoe Company, Chicago Heights, Illinois, has published bulletin 244-P, describing Amsco manganese steel for oil field service.

16—Pumps

The Barnes Manufacturing Company, Mansfield, Ohio, has available a 20-page data booklet on Barnes Automatic Centrifugal Pumps. Available in either stationary or portable models, Barnes self-priming centrifugals in sizes 3M to 90M are completely unitized, gasoline engine powered.

Also included in the booklet is descriptive and engineering data on the Barnes high-pressure, self-priming centrifugal unit especially designed for emergency fire-fighting. Weighing 180 pounds, this air-cooled gasoline engine powered unit has connections for two 1½-inch hose lines to deliver 45 gallons per minute at 50 pounds pressure.

17—Tires

The B. F. Goodrich Company, Akron, Ohio, has issued a new 48-page booklet on "How to Get the Most Service Out of Your Off-the-Road Tires."

The booklet first describes, with text and pictures, each of the off-the-road lines of tires the company manufactures for specific services. Reasons for particular constructions to meet the exacting requirements are explained.

18—Radio, Electronic Equipment

Walker-Jimieson, Chicago, has published a catalog of radio and electronic equipment containing information on advanced types of electronic instruments, devices and tools. It includes descriptions of products such as industrial X-ray machines, an electronic comparator, test equipment including signal generators, tube tester, and multitesters, photo-electric devices, die-less duplicating tools, plastic sectional wiring systems and others.

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Kobe and Dresser Officials at Mid Continent Meeting

Expansion of service and facilities was discussed at a recent meeting of Kobe's Mid Continent personnel, attended by executives of Kobe, Inc., from Huntington Park, California, and Dresser Industries from Cleveland. Pictured, seated left to right: H. W. Wilson, W. C. Gilmore, J. T. Langham, M. L. Walraven, Jr., J. B. O'Connor, executive vice president of Dresser Industries; C. J. Coberly, president of Kobe; A. R. Weis, vice president and R. C. Kelley, director of purchases, Dresser Industries; R. J. Lyons, Wayne Clark, H. K. Ihrig of Kobe. Standing, left to right: V. T. Kirkhuff, J. T. Roberts, W. T. Petty, D. M. Dice, D. Scaramucci, E. O. Layman, R. A. Feemster, H. K. Browning, general sales manager, Kobe; R. G. Ralph, division manager, J. T. Lewis, E. T. Harrison, C. E. Buchner, J. J. Prichard, C. E. Edwards and R. F. Schooling.

Name Changed

Because the former name "Westinghouse Electric and Manufacturing Company" was long and unwieldy, the board of directors of that company recently decided to change the name to Westinghouse Electric Corporation.

Offices Moved

Shand & Jurs Company, Chicago, manufacturers of petroleum tank fittings, have moved their offices from 310 South Michigan Boulevard to Suite 813, Marshall Field Annex, 25 East Washington Street.

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